CENTIMETERS



14:1

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Thomas a Edison Papers

A SELECTIVE MICROFILM EDITION PART V (1911–1919)

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NOTEBOOK SERIES NOTEBOOKS BY EXPERIMENTERS OTHER THAN EDISON

Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments -- W. W. Dinwiddie Disc Books

These twelve notebooks relate to the work of William W. Dinwiddie and his assistants on the composition and manufacture of disc records during the years 1918-1920. The experiments are numbered from D1 through D821, although not all numbers have been used. Edison's involvement in the research is indicated primarily by the comments of other experimenters; there also infrequent notations and instructions in Edison's hand. Included are experiments aimed at producing the "perfect" record blank in terms of ingredients, varnishes, and the manufacturing process (mixing, pressing, baking, molding, and printing). Also included are occasional entries listing various chemicals and their characteristics or sources of supply, presumably to determine the best ones to use in the experiments.

Experiments by Dinwiddie that are related to, but not directly connected the "D" experiments are described in N-19-08-20 [not selected]. The entries in N-19-04-23.] N-20-03-01.1, and N-20-04-12 [not selected] are by Dinwiddle's assistants, Henry G. Atkinson, W. R. Slimpson, Henry E. Thayer, and John Welchmann. The notes also indicate the involvement of Charles T. Dally, E. E. Dougherty, Charles G. Kircher, Ludwig F. (Louis) Oit, and others. Some of the experiments involve the use of mixes prepared in the C. T. Dally Disc Blanks Composition Books. Some of the "D" blanks described in Dinwiddle's books were used for further experiments documented in Dally's books.

Four notebooks, representative of the work in the other books, have been selected for their numerous references to Edison's involvement in the experiments.

N-Number Labels and Inscriptions on Front Cover

Selected Books

18-04-30 "Dinwiddie D-1 -- 100"; "Disc Records"

18-08-14 "Dinwiddie D-101 -- 200/++"

18-12-07 "Dinwiddie Varnish D-201 - Next book is 401 - "

19-01-10.1 "Dinwiddie D 401 -- "; "Disc"

Books Not Selected 10.02-06

BOOKS MOT SELE	cteu
19-02-06	"Dinwiddie D-501 597"; "Disc Records"
19-04-23.1	"W.R. Simpson Edison Laboratories"; "Disc Records"
19-05-20	"Dinwiddie 601 "

19-08-20

"Clay 1919 W.W. Dinwiddie"
"Dinwiddie -- D 701 - 1919 & Stripping Nickel" 19-09-04

20-03-01.1 "Henry George Atkinson. John Weichmann"; "Disc 20-04-12

Records" "Dinwiddie D-801 -- "; "Disc Records" 20-04-15

Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments -- W. W. Dinwiddie Disc Books Notebook, N-18-04-30

This notebook was used by William W. Dinwiddie during April-July 1918 for notes relating to the production of the blanks and submasters used in the manufacture of disc records. Edison's supervision of this work is indicated by Dinwiddle's references to his suggestions and by lists of chemicals referred to as "Mr. Edison's." The experiments are numbered from D1 through D100. The entries indicate differing methods of preparation involving variations in the baking schedules and the use of different ingredients, combinations of ingredients, and varnishes. Most entries contain comments about the results of the experiments, including whether the disk was cracked, rough, too stiff, or stuck to plates and molds during printing process. Also included are references to varnish experiments and to "drop tests" that were performed to determine the durability of the experimental blanks and submasters. There are occasional lists of chemicals ("materials obtained in N.Y."), along with notations regarding their characteristics and sources of supply. The notes indicate that Frank Clancy, Charles T. Dally, Charles G. Kircher, and Ludwig F. (Louis) Ottworked with Dinwiddie on these or related experiments. The front cover is labeled "Dinwiddle D-1 - 100" and "Disc Records." The pages are unnumbered. Approximately 110 pages have been used.

Plate in mould for sticking on the shurt of celluloid submaster, 1045 German Silver plate Sticks on one sheet cellerlaid with this plate - using regular delidule when the plate to Dimeridde in Building 4,

II-2 make a regular cellulaid automate with the blank prepared as D-1 b omall gaps are cut in the ridge to present trapping at - times withbourse Prints how July and briste near to center hole. solge secund to be a little low.

Spil 30-1918-

A-3 Automate blank raninched with 1841-E Varnich and two layers of blothing paper with 1841-E Varnich applied to each aider, Air africa and a second cost of samuch applied to top surpace-Bakel 1983-E Whitele. (Blinks mear center) Nevamided may 1-18-taked again 1983-E Stuck to transfer plate and applit the blothing paper.

Contact 4-54-30 1000 lbs 4-58 Waturan 5-6-30

٠.

Apr 20-1918 Blank prepared same as D-3 but allowed to stand all night before taking 1933-E Asledule - Baked treated with "tanning" solution dill not stick to plate - But the blotter separated, Steam on 1-17 Pm. May 1. 1000 lbs +23 1-29 1- 38-30

D-5 Blank prepared source as D-3
that allowed to arr day 24 hours
there 2 coats 1841 barrivele &
harried 1933-E.

May 2 Atomorn 1-55 Pm 100 lls star
Contact 1-56
1000 lbs prephadis 2-01
Water an 2-07
off 2-16

Sheet of condensite in film Trade by Drawing Little Fibre Co, Bridge Fort, Montgowing Court, Pa - placed on discount of submarter - slavet worth platter warm Draw on 823 1000 lls cracked around edg mand be rough from mall lumps of condinite on surper n.G.

antatt present will thermonto reader 200° hold for 2 minutes more Then take 2 minutes to come up to full perusure - Hold full persure for 17 minutes then cut it back abouty (take about a minute) to contact jerescure - This makes 12 -2000 - then turn off steam and cool as usual -Make one round inspect for parallel cracks - wwo. 12 pinted z' a.K. 10 poor prints - There were no parallel erachs. See D-12

Farm Rucher -Varnish with one coat regular variable -12 records - which have hamse the records which were to been disconded for some of and fruits off and a sound.

All new disconds due to trapt air - Three erached actors the label and one had a parallel crack. But all had the trapt air spots -

May 3-18

Place die Phility paper an asubmactin blank - Varnich with 2 min
more to 1541-E barnich defre any
blins on gan black has been added,
feit an barnich write it socks
completed them the shother and
otteha it to the blank an dry and lay on another
dies of blotting paper and
apple Prannich as eight I die dry one term there
apple and esot regular 1841-E
plothich 5 min brocky Buke 1988-E
they of Steinger pur

1000lls 11-10-30 trata on 11-16-30

30

Wanne as DI except-use suly one thirthness by paper Steamon 11-33-0 amad 11-34-0 1000lb 11-37 Westroom 11-44 aut 11-54

D-11 For Mr Clavey.
Same plate as II-1 but with and defile of groove necessary Stick on one sheet of celluloid with this plate- using regular schedule- send with plate to Building 4 - WMD,

For mor Karolier - make 12 points Printing peres schedule -Contact pressur metil Hermoneter reaches Hold for 2 minutes more -Then take 2 minutes to come up to full presence - Apold full presence for 9 minutes then take about a minute to get back to contact pressure I like D-7 - This thakes 14 munts Steam after thermometer readers 200° Twen off steam and cool as usual all peror prints -Sme lorached across label 33 radial cracks

May 5

1-12 two shirt blothing paper assaled with same in the second winds as used in D-9 - Hung my to day exposed to air on both sides - day for it hours - Then loid on submarter blanch

Steamon 2-48-30 Could get and 50 the atom 1000 this 2-53-30 Could get and 50 the atom 1000 this 2-3-30 Could get and 50 the atom 099 3-12-30

50 a - Cotton flow, 50 'a - Cormyan.
3259 dhia clay mixed together8254 Kiculgular)
500 gas black.
Could not get in more than ha
11-the clima clay and Kicelghurcotton flue gas black

D-15 129 gas blacks 50 g, cotton floe, 250 2, T.N. Lac 433 g, clima clay I believe that by ening a little less flow that we can get she lack down to 30% on the 9-16 25 g. Cotton Flow. 15 g. gas black. 600 g. Schima clay Eveld and get in 516g. clay this makes the TN and 35%

509. Rosin I grade 209. Cotton flee 109. Coas black 709. China clay This was comparative little trouble to work.

300 q. T. N. Lac - 30% 20 q. Cotten floc - 2% 10 q. gas blash - 1% 670 g. Ohina clay, 67% When rolls are running who when rolls are mining when if of the chima chan has been added part a little denotioned alcohol on the rolls more and them, to help works in the china clay. This engetic by with Chican a good as the rosin D-17 shellac 20% Proin 10% Cottonfle 2% gas black 1% Idinaclay 67%

Look D-17 and laid it on the lost rolls covered with a new justing of about 20 minutes and Irolla list over without any difficulty.

valeolist too volatile Swall Samples of D-17 land on rolls-three v Benzole at a time and a fundrops of various solvents added when rolling I say in Acetone i Colycerine not a robout the mystere of Tetra chlomapthaline not a rolu Stranic acid stops stickmess - Venice Turpentine and northable also both lover the sulling fromto boncomes the stelling fromto boncomes the stelliness substiced by the addition of North · Copaila Balaam V Turpentine · Prostin oil v Lineed oil V Cambon Tetra chloride tooks reamplion Kerone and V Stravie acid

2259 T.N. Lac 5009 I. Room, benice Tenpentine. cotton floe, gas black, china clay, 502 tenee Transective 202 letter floe 1.84 gas black 570 g. China Clay

250 q. T.N. Lac. 25% (extract), 2% 1% 67% 102/2% 50 d. I. Rosin (25 g. Napothaline.) 20 b. cotton flor. 10 d. gas black. 470 g china clay.

40 gas block 2%0 660 chalk But Prosin on rolls - then wood - challer - and gartela Prin mitil it ground also to seawly then put them hand coffee will to hear who the Glabell - made one blank - tooks coarse from the course powder but. I seems to be well mixed Varnished 2 coats 5 min vise 1841-E baked 1933-E Point OK, but rough surface due to unground portedu Dropo teat broke on 2º drops but a few to be about as story

rolls and reheated like D, 20 worked up into a got a minted on moulder above 150°F thick material was too stiff and showed considerable deflots the to some of got - 1000 llspen got folded up by hand and fraulded - about To think made on 97. seeon Burnd weights 937 grammes in Berape found 4/21 979

20-28 250 g.T. N. Lac 485 og Kisselghur This is all-that I could get and the ring was then more dry than D-24 The Kirselghur is very much more bulky than the clima clay but when in the mix it doke not seem to make the mix more bullen Specific Gravity determined Cey China clay week to 24 determined same time by L, Ott 1.752+ Print was I. Co. Too atifts fell with 1000 the presence flowing hadly with the mould,

20-28 250 a.T. N. Lac I. Rosin 25 & Napthaline 20 of Cotton flow, 485 Ja () Kisselahur This is all that I could get in and the ring was their more dry than D-24 The Hisselfun is very much more bulky than the clina clay but when in the mix it doke not seem to make the mix more bullon Succepta apoints determined by China clay week to 24 determined some time by 4,0th 1,752+ Print man T. Ct. too atffto fill with 1000 the presure - flowing hadly must be the mould,

D-29 - Press Reliedule Experiment. Run one press with " moulds and one during in the top apace, during about 1/2 inch thinner than a pain of mortels, Thate contact just lifting the 12th platter knowing an air space own the dummy, Tum 2-2-10 schedule It this does not give low juints is first save the moulds. with contest presure of 100 lls the top moved has 10000 lbs to support and bottom mould 10,800 among nolls to get in when presence - Paint ON,

55 of Napthalme 22 to cotten for 11 ad goo black 737 da chua clay 55 g total. double amount in 24 D-32-Jame as D-31 but did not, have mite enough to fill the mould used a slightly larger ring,

int it reemed to get t someds very surface is long craethy and fair.

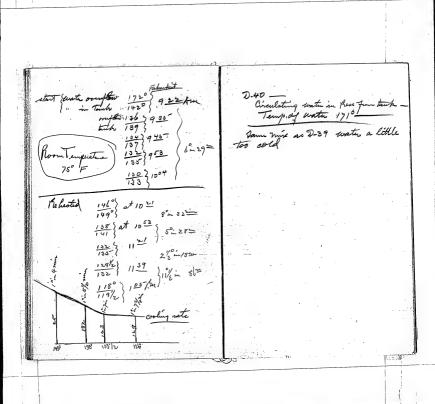
D-34 -83 & I Roem 83 & Napthaline. 33 gd cotton flore. 17 fg gas black. 1105 gd deina clay. Rolled to 1/4 thich then wife with hinge sheet of dope laid on board and marked with ring die. Back of mand convex 1/6 inch I to get thean out, auta-tonolus first I makes, a record concave on the back, a near in the got shows on the point - But randace is often with and medicularly of only 55 g napthaline tras med found of gute at had not had - holds athin that there were no surplus to aquere aut,

vame as 31 except that cotten for neigh was degreed and prepared for surviveles per clean and free from cotton a chall from cotten seed free fam backling - fold wot make a dise got folded up by hand hohe 21 = tout until the convex back,

3009 T.N. 50 & I. Rosin 40 & Cottenflow. 20 g gas blach. 590 g Jalima clay. 1000 g. Total no najethalem med More cotton floe - good quality. moulded like D-36 - surface alrow expect of a seam in the got, making blackles I must morning tothe 201 and 26 show her deformation than records previous made with low grade flor, \$ 37 down some "air quellings" same 236.

3/23/18 10 & Cotton floe 10 & gas black 55 & China clay made reddish mottled print. quitt so good as Doll but free from grachles, microscope I shows that mould was too

20 og Najethalene the material berry much more smooth, was too hot restal who he



Priso at 133° The Dally Brown mix made by The Dally the cornelation too cold and too much clay in mixe Browne lon cytathing

than Joses, The The Street go 30

temp of exculating water out 206° in the tank

in the poly of Court, in the press of an of sticking it on the short you for cents back in the press that pin is forced than, but you has a little rough and got show that an it, say I save the said for the poly of the poly

D-45 - Same as D44 -Some mixas D-39 -GK, weight for slightly rough gole.

same foropotions as 83 Ereened the clay thru 70 much, probed over all lac from clean looking shell lac for store whom - instead of using the 19 store room - instead of wring the grant T.N. of previous experiments.
Died chalk in steam over to blows after mixing the rapiticles with it.
All mapthaline small hardisappeared so I put in first amount of 20 g. In rables Clath was seemed thru 70 much sereen. Worked alone at night June 5 after gally got them and got mould too hot study causing RD. lent I believe that general surface was improved of clean shellar

D-47 Same material as D40 & D29 lied on steam plate and reheated - to stiff to point out, Mould and bottom curred plate were lot and press cold - Could hot make the material into a got entirely free from creases

300 g - H. M. Peakedy (164) stiff -40 g napithaline 10 g gas black 00 g china clay 600 ta 1000 9. Tork off roll in 3 pleet - allowed to cool - strated up an tot plate. Shellac relies too stiff and dry sown more dry them D 47 but the got was a little refer. Try more room also more ela

too soft and sticky to take offrollo added about 70 g more clay N. is ruch asther the Peabody (144) till shellas biber between platten to prevent too quick was too hat - stuck Broke D 33 and it did not show the naptialine one to the extent that this does but four

D-50 - Material of D-59 and once other scrap junted same as D-49 except did not have mould so het - did not stick but material was not quite soft energy,

0-51 25-51
250 g. H.W.P. Frie (Angelio Amber)
15 g. I - Provin
10 tg. gas block
655 g. I china clay
Works more Idul Than
when mix contains hapthaline Condused like leather an the hot plate - n.G.

250 q shellar H.W.P. Fine 100 dg Nosin -10 gd gay black -6401g clay 1000 soften than 1 5/ Condensed on steam plate to sublew stage "1 (2)

250 g Hellac HWP. Fine-50 lg Bosin - Ignabe -50 lg Bonice Tempentine -10 g gas black 640 g Clay (Kirs) provided about the same as D52 possibly not guite ,40 sept on rolls 200 gs shellar HNT, Fine)
130 g Posini
130 g Posini
10 g gas black
boo to Olina clay dried.
canne off notes about like

90 3 bo g shellae / P. W. F. Fin Kanguhia.
10 y gas blach
630 to a tima clay.
Too by the rough compristion on
the rolls - seems dry and
cumbles on edge.

1-18 started June 11-18 Shellar Liguid solvents July 15-18 * 1 no I denat alcohol, est 19 of shellack in a test tile with 2 Solvent naptha -*3 Temperatine, refters 4 Carbon Tetra deland. (1) Alcohol acts much quicker than * 5 Bengal! any other. *6 Complian Oil boiling discolus it, priopite @ Fil of Bitte Almonds - (Synthetic) in more 7. Rosin Oil. Boiling in rosin oil has no of than twice the time distalves about the #8 China wood oil boiling has ze a same as alcohol - waxes settle to bottom * 9 Bengaldehyde Syn, Oll of bitter almonds. that remain suspended in the alcohol. *10 Antro sempol. (To) Dichlor Elhane - dissolves about the 11 adar woodail Biling has same as alsohol but a littles slower 12 Encaly htus art. Boiling has than @ wasses float on top of the \$13 Palmittie acid dissolut on boili \$14 oil of amow. Birling makes shellae ruble 3 Turpentine softens shellar very stiglith 15 Tenebene Blullar is sticky often boiling-solution tunking 12 hours - surface very sticky, * 16 Dishlor Ethans, Ethylene chlorid. (3) Burgol softens shellac and it sticks 17 Kylol. Shellae is nubling after boiling together in a tough rubbing mass after 18 gasolene, Birling has no effect 12 hours - at is not at all sticky 6) Camplion oil - after 12 brows - surface 13 precipitates like a july on cool I Planties very boft and sticky tell the 14 same effect as theuse latel bie still quite bittle, 10 nitro beunal soften shellas like dental mulher not at all sticky and does not which together as with seemed 5

July 15-18 19 anyl acitate, softensolulla @ actone dissolves shellas as quickly as *20 acetine alsohol -21 Toluval Softens cold-no effect on boiling. (24) chloroform roftens chellac to a 22 Kerosene boiling has no effect 23 Formaldelyde neares like nubber 29 / pleacher - soften to a july in a few 24 allowatorin 425 any alsolved not as good as Ethyl. *26 Petrolerum ettrer , bleadus shall *27 acetic ettin pertain (30) The shellar is made poft like nubber 28 actio and soft to 2 10th and the liquid turns a rich garnet color the shellar itself is bleached -*30 annoma 29% complete colutio

Wr. Edismi note -

Hot return for cheller -Steams and with a little acutamilial to make more fluid - cheap - 30\$ lb

Mononitronaphthaleme - its a artis ahacep
Munantherene - 75 K Ch

Trichlorophund - fairly cheap 120 lb. Henrobum camplion - good arbent ligid 1200 Quindine good arbent

Peringonaphol good ashuut oring Hong out - V Berry may be good ashuut 756 on 1 Both may but think - 1,00 lb.

v also acetanilid 100 lb.

Bota Najthol makes at my automa like D-57 D actionally be british white without withing may off of the addingthour motions a very touch material puts or agtindent more affect to make the puts or the supplied of the material but have a see ample grantith to make the phillne very tooft, a smaller grantith count of hour no affect facus dalke thethe complaines and in 34 thome - got buttle on and fack almost photal no effect still buttle direction oblow being al-acts like 57D June 12-18

D-67 - mr. Edison suggested comp

1) 5 g Truchloophund 10 g Olublac - 33% o when cold - soft like rubber pasking -

2 29 Trichlosophus 89 childre 20% when cold about as nort as celluloid, but more brittle.

(3) 19 Trichlos plant 9 g shellar 10 % melting point considerably lowered and when cold in tougher than regular shellar

Grannet las acts the same as dullace 33% Trichlosphus seems just as noft,

Thund - acts like Trichloophend and regime a smaller ant for equivalent rent total card, and para beach act like

Cus1

- June 14-18 alone a lattle notte them shellow plate than the D-39 militue, Made a good frint but it broke D-59-Same material, heated up on hot plate and moulded again. stuck to mould and hope strace shows ery traligation of the Tachlandshould just like the naphbalent

60 g. Trichlow plundl 540 g Shillak - 1+WP-164 and gradually added shellow sti constantly, was careful not to aucheat the shellar, Parried ant in chima didus to carl theighed ant 330 q of above -10 to gas black Tao much conduced an steam plate - made a very dry got and

shellac - HWP-164 Stravie acid . to I hosin gas black -Ochina clay Thingt on roller seaves the rolls cleaner than anything sh On steam plate - seemed to conduce - so that it we is use to print

250g HW10 164 Olullac 501g I Rosin 50 lg Napothalena 10 gd gdo black 40 lg Jahnina day (Lion) Rints with same type of mould as Pathi new. Gob seems to dry - mould may not hape been hot enough. D-63 Same as D-be except use T.N. hac-my little if any difference on the rolle- may be a little

same as 63 I Rosin -50 a Stane Acid -10 at agas black -640 ta Talina day - Lio bory soft on rolls - leaves the rolls very clean any previous mixture D-by first print had moulds toocold 20 print was made of same material exacted attind time and was them soften than others except 65

sharme as D-64 except ament Lac is med instead Softer and more sticky than 10-64 Courted with mould like Pathe first time mould holder was too small for would - 2 time aid not have quit mound material - hoth came out

Varnish Exp add rearly agual volume of alcohol - mu dun paint twice Dornish I coat bake regular banish 1 coat of one 7 min wise vanish and bake again mondo une injured be sulplus - apparently houth clay - also clay that into and caused a white for very small pull outs -

60 to Stanie and 10 go gas plack 6 300 g china clay Made a noft gob-ppaenth as noft as Pathi Record OK on both side -

bod I Rosin od 10 gas slack Sund not so soft as D-6; made a better

Strance and gas plach ours aft - but nother comes all to pieces an rollo Very goft en ateau plate.

makes a sling sold- but
en little different tetteren This
and 67 and 168 69-1 did not have enough toming polition the clear with alcohol before 69-1

30 of Strave Acid 10 of Strave Acid 10 of gas black 630 of Telina clay Very good consistering an rolls does not law rolls quite 20 clean as when mix contains more storie asid, 2.70-1 best print yet - several blitters developed in 3 hours. D-70-2 made on brass hack moulds.

D-71 Same as D70 except mae garket Lac instead of T.N. D-71-1 Seems to be about the same as 70-1 More blisters developed there -in D-70-1 D-71-2 printed on as pair of brass back moulds love it very good - frient is ok, more plistus develop than an 2-70

250g (164 Bletlae)
50g I Korin
50g I Korin
10g gas block
10g gas block
640g Chima clay (for fin dry seales -Due to difference in clay

Same as D72 except use TN Lac and same as D-64 except that the the state the other than This actid exactly like D-72 53-73 inclusive made with Lim day which is more like tale Elec not contain guit lut in microscope looks the fine microscope looks the fine micro. The old clay contain grit, but is very thool dentity and and shows for ofthe mica acale.

particles - fine to,001 (1) www H. Scheel work 2500 her " and la (2) K&B - 2010 (3) KARS 2010 A in mire lumper. fine white grit- mica Klipstein to.002 Westle above Star washed) a little finer than & with larger a little Sime Than @ Refined nos Dumaculate Karlin & a little coarse than & but not so lungly, KIM Clay Wine Edgei Co fine arrage, but langer and mica partille to .002 L.C. Clay laditich to ,004 caarse mica about like O but more lungy. particle to,003 Dumblruse P.M.C. but more coarse planticles. Wen H. Scheel - letter may 28 about like no 1 Dometic no 37 lott, White Ker Course gritand Unica particle to -003 Golding Rouse particles to.008 Donnel Wevens Co 43 Cla Kors Ture Blanche about like (4) jon clay no Large particle all below. 0002 Notten Stone Chrystal - Liverthan Very fine buedles - some as long as, oob Riscelghur - K. Co of Amer-Cellymina Old Clay bought in togo Jon Schul me bage about like flow clay 18 and both supposed to be the same 20 had as file as & on 9

100 strane ació 5909 of old clay from Bottom of growe OH, Brady bought this from time as the other clay that worked exactly like Lion clay fairly soft on rolls but of as soft as lion da Made up an steam plate too stiff to ball up well livet

D-76 - Materials obtained in 213, Tyrone " 3

D77 Waterials obtained in MZ. C.- Florence White Seal 14/4 le Standard 5% Bois BASO4 10/4

Materials of tained in new york all crystals - M. Co fine to 006 Union Tale Co. not quite as inucle fine so (1) 3 Tale hodusts to 3 J. W. Coulston R. Burnit Vinber looks a little lipe precip chell with Capital Band Calained Magneria 90 Time best has crystals -3 II no Barytes 2 d L Golden Ochre 6x Tena Alba, Clas A Intol Pinh 110 Baryter or Tena Alb Poarutes bare * 95 Rd 22 € B Drop Black 7 d Course. coarse. A Drop Black 8 & Dry Blane Fixe 54 veed as dies also (3) U.V. Like like (3) " C Burut Vruber 5 4: .. BX Ochre 4 %. . Aluminum Hydrate 16 K. V. V. V. V. Donn & Kruse Botten stone 21/29 Recidual from Extraction of victor Same Keridual after roasting-Keystone Mininals Co. A-X Notten atoms Clindefield Roducts Slave Fixe 20 plane Fire from 25 lb lot.

Waterials obtained in new yorks (1) E.M. & F. Waldo Blanc Fixe G4554 fice but less flake enjotals "Basofor" (3) Marden, Orther Hartings Blanc Fixe 5/2 e bot 4/ Greensaid biproduct (1000)? to (5) Gabriel & Solvall Dry Blave Fixe 4/4 & Coalse critals (9) Whittaker Clark Faniels Eng. bashed day. \$39 frier than (9) but all rinear (10) (Slate flow \$ 225 Wifine but some clay Hakes (11) Tema Alba no. 56 \$22.50 looks like 11 but not as fine (12) Kieselglun no 211 \$4000 Crystals .006 -008 (13) (Tale no 4 about as fine as A x and not unifor (14) Hammill & Billespie Rotter Stone 4/2 to 5 & Coarse "maquesia askertor" Welch Terra Alba 1/2 Kim bags UC. coarse crystals .008 MD.C. Tale 24 plates of mica ook Leemoor Clay 2/4 & Siley 24. Clay crystals and repressial opines. Cookie crystals -(20) T. B. King . Wentworth Tema Alba,

Cooked too long on rolls -

200 general see 200 F. Frozin . 20 Stanie Azid . 10 gos Stack . 650 A(X Viotten Stone . Toostiff on let plate

Entirely too stiff on hot plate

55 g starie acid 688 g AX Pottin Flour 10 g gas black 000t total like D-83 ou rolls Worked much softer on steam plate probably and to taking a shorter / 200 CC AX Patter Stone jolted down solid from 2 60 60 Close 25 CC toda may the added without increasing its bolume to called about and all might reduce to the today. AX Kolten Stan too Stiff on stramplate 125 ce Ponolithe wight 150g Should the reads up now and with rolls not 300 g wowlith will fill the pores so hot and they it could be removed so that it will be were soft on atrain plate

glass jun = 273g D-86 Varmah Exp. -2689 reglelar varnich -Run-thru small paint will zon small amt of about added in paint mill to about replace endporation. - one cout me then I cout also 86-C - two court of short then one cost riging 86-C - two courts of should play the fainted 7/5/18 all good surface -

in proportion to the lac - Coamet Lac Stanie find Gas Slack Lithopone Rotter Stane Post Littopane in first Mean Protter Stone

185 garnet Lac 44 Stravic Acid 10 Bas black 328 Lithopone 394 Protter Stone A Double aut made up Lac - Proxim - I teams acid multid nolls with gas black -Whopane mitted in well and Aronhea Live on hot Wate and made a record antrance as good atte Mades, is capable of making.

* 20 Gas black.

* 20 Gas black.

320 Little Johne.

390 Portle Slave. AX

denble and made up?

not quite so copt and rolls

as 088 - copt and rolls See also D99

tg - / Ax Rottenstone -Prints as good as 88 0189 is it is a little stiffer on a little stiffer on Sec also D-100

Same as DAD except ine smother witherstone - buy step and dry on the walls - Could not mould

Makes the astest surface yet that has tellfles and what to with well in printing,

Vareich Externent, glasjer weighe 273 grunn 3459 regular brunch Sumbiscocit, 3459 Panolith Put the sawall paint will added about 50 CC ho Denet alolol Photon are coat very heavy than second coat regular -variety Sanded good but not much better than regular

(2) * 3 Gildeis White que letter file 49 (3) (5) (b) looks like Tale -Speiden Clima Clay note) all rinea elates ,003 Clay no(2) fine but has mica has some grit. crystal -Furst Bros Earth - E 8186. Wester and 112) C. J. Osborn Co. 701 death 3000 Protter (14) Clind field Products blane Fixe. ViVita (15) 25 lb pouchase - blanc Fixe. Florence White Seal "Zine Opide

gas black -JAX Rotto stone worked all on rolls but hept it on a little too long Started to condense ale steam plate - too ste to make a full perhut,

gas black -Shope rottenstone -Brothed OH. on rolls -Printed on new moulds quieted surprise yet - got was a like too Steff - la

300 q. negular vienwich-200 G. "Florence White Seal Zie Oxide Ground twice then paint will ladded about 50 de deux alcolo Sounds about the same as

Varish Exp. 288 a rug Varmish 288 a. Clikelifield Blanc Fixe. Runtim paint will twice added about 50 e e alcoho Mearly all to poor pints.
Two surpose out of 8 are Cit.
and sound a little smoother.
Then the regular.

Same material as D-89 hade a beautiful joint but bubbles swelled up fin it from trapt air gave same results -D-100 da used the material v out four D90 to get enough Made two more pints both cached in mould. These are the puly puints I have had to crack" Carbonale " deloide mon Sulphite rou

Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments -- W. W. Dinwiddie Disc Books Notebook. N-18-08-14

This notebook was used by William W. Dinwiddie during August-December 1918 for notes on the production of disc record blanks. Edison's supervision of this work is indicated by Dinwiddie's references to his suggestions and his comments that Edison personally tested some of the materials. The experiments are numbered from D101 through D197. The entries indicate differing methods of preparation involving variations in the baking schedules and methods of applying the varnish and the use of different ingredients, combinations of ingredients, and varnishes. There are also illustrations of various ways to set up the presses and molds. Most entries contain comments about the results of the experiments, including whether the disc was too soft, sticky, or stiff and whether it had swell-ups, warps, or cracks. Also included is a description of an experiment "to determine what metals are most liable or less liable to stick to blanks when used as moulds." There are occasional lists of chemicals and other materials ("materials obtained in N.Y."), along with notations regarding their characteristics, sources of supply, and prices. Inserted into the book is a 2page memorandum from Dinwiddie regarding the procurement of stearic acid in New York City, along with Edison's response. The notes indicate that Charles T. Dally and Ludwig F. (Louis) Ott were working on related experiments. The front cover is labeled "Dinwiddle D-101 - 200/++/." The pages are unnumbered. Approximately 110 pages have been used.

Gens an Mining Marline Mitchell 1966 1964 19. 6 pitch 16 thath 10,883

D101 Materials obtained in hew yorkings apparently not air floated -(1) Ground Nother Stone T. Hen An lestups, 063 + (nestroisal delicase allowte like anothe nothersto 2) Finely poundered Earth - Freezot Bros oto. 3) 400 A.S. Silica - J. Lee Druith 060. 9000 day orystals,004 "Clay for natural Earth " med Maquesia C.P. N. Chem. Co. no 9 Blace tis Lines than (5 and mutal ... wo 11 Contains large Cryth com starch bon mintom lifre Kisseldem - Very John " Maquein Silicale 5000 J. Lee Smith W.F. 400 Dilica cheapen the full of grit Geo. W. Grote E. G. B. Whiting (Paris white) P1. 55 cut. Kirklahm Co of Aminea - California Kin Whiteher Clark Di Daniels Kinglen -Calcium Carbonate 3. J. Din flooted hetert no. Custals, 706 Ground line stone Toch Bros "Colloidal" Holane Fixe V Hill bouset D-C Fille 3 bear feller

250 g Shellac XYPP NO3 10 g gas blach. 140 g I blame fixe. 1000 total town way grape and whichy

8-103 barnish affirment.
Bestouts in alsolut weight
to cover after standing all right.
2 state put an and bakel
regular way:

D-104 Materials Obtained in Zuwyork. (1) Imperial Color Works, Colour Falls, 21.7. (2) Siemon & Elting alumina Hydrate. Barium Sulphate 9109 (3) Tena Alba Zio 1 marble dust-(5) L. H. Britolin Superblite - Calvin laborate \$ 2500 (b) John C. Warda No. Infunorial Earth Blane Fixe large mica cristals-looks like day has mica cristals China Clay Fullers Ealth (9) Precipitated chalk (10) Tripoli beng coarse quanty (11) (12) .. Whiting precip challe - bipodust 2/2 x notale floated - clay englis -(13) (14) Hershaw Fuller o Coodin Co. Hz. Divitio Protection (15) (16) (17) (18) 120

D-105-Dally's Think no -70. Good of clay - rosin - flec - strawoil (10 temms) and Solvent mapther - Delly mix no40-41 1200g, Noin melted) pressed in hydraulie press between two 28,8, 1 Cotton flow. pieces of kaku. 3000 q. Challe -Too Inhade rosin in mix relative to Adoen't naptha makes it stick. Flor first in mixer -Solout naptha on the paper belps. then all melted soin then add to of chalk at a time mutile all is in and mix for 115 cc Solvent napthe 10 grammes than oil 1/2 how long too much for mixe rosin 100 9 Clac clay 9609 Porin - Stake 3000 554 a total 230 to cotton-2400 Chalksille Blanks made with shalk double up seathers works better than paper in pating - mr. 2, zug quoted using more pare and lower temp, in bake mans wire much

ang 14-18 2-106-Port regular variabled blanks in bacum drier heated to 1200 - contol not detect any softening with finger nail. heated to 1300 - recensed to veratale a little easier lent very little. heated to 1400 - easier to senatch, but direct presence with finger nail did not leave a mark, heated to 150 - direct givenue with fugue nail makes a slight deut tim the variable, This vacuum drier swill not get host enough for parish blank baking

ang 21 - ang 23-18 with hot water circulation Thermometer in tank. Platter at 550 But - 1310 F resonant of stilling to mould only 525 the tilement on a communicate with sufficient, see but page this book flatter at 60°C- 140°F blanks stick to mould -Platter at 57°C do not stick not test pull outs are carried, 2108 unlater 700 lls julime, accumulate 700 lls juliane flatture heated by lot water circulation 57° C. = 1343/5° F. Betiles heated on strom plate count with partitionard are OK but got must be hot wied Dally mix ho 70 su page Mouldfi Their for loose ni center pin in planger on arbor probe-leaves a center mant on got to center the got in lightentic priso, D-110

Delly No0 = 960 hoin {= 261% No79 is

230 Cotton fle } = 65% Connectivities

2400 Challe {= 669% Scape Clay for

1000 9 Noon = 25%

D-110 {240 g Cotton = 6%

276 g Challe = 6%

DIII

1259 Proin

30th Cotten floe

345 990 = 1359 Ar Mother Stone
- This is a little to dry
Too dry and stiff to make
a good blank -

2112 125 g Rosin 30 h lotten flor 380 g Ax rotten Lan a little too stiff material to make a blank

sue-D133 D115
1259
309
3459 Thurs \ 875 g Rosin
for \ 210 g Cotton \
3gal \ 210 g Cotton \
3miy \ 2415 g Ax Rotton Stone 240 g Cotton 2760 AX

2114 Mr. Elican Tested following materials for in 4839 Blane Fixe Chalk not much iron Magnesia Silicate very little iron. Hel decomp not quite enough to make a full plants - Sum OK. and free silies precipitable. Thing day very little iron China day Sec 132 no iron O.K. Lion clay Protes Home awful Giron N. Co. no iron acid decompose it some ing precipitale soluble in KOH valeo

125 g Roin 30 de Cotton flor 265 le 400 mich Biliea made very estumbly mix2416 One quart regular 1841-E Varnick varnish contains about 3.75 g. par 236 ce contain add 2,829 7,569 6/4 2,069 6/4 236ce Contains add Bake on schedule 1/2 how 110° F 3/ how 1+DP 1/ how to 1500 hold at 1500 for 5 hos ony bad blanks warped very bad-* 2 Ochedule - 1/2 hour at 110°F 3/2 hour at 120 1 hour at 130 1 hour at 140 hold at 140° for 7 hour 1000 9 Rosin 25% 28069 letter 7% 2726 chall 68%

D118 1000 g Porin 25% 320 G Within 8% 4000 g chalk by % Control of the second s

2119 260 g Rosin 260 g Cotton 2640 g chalh 25%

0120 to dry - his or time and was to ormuny to stick tay the in app - too latiff to present in paint - see fire 1080 g. troein 27% 400 g. Cetton 10% 2520 g. Chalh 63% 4000 g. botter than 121 but

30% 10% 60% 100% 12009 100 lg Coloton 10% 24000 chalk 60% 4000 chalk 60% This was the only one perfectly flat in a let of 20 harbed in four after wantering. (115-126 inc) one after wantering the consider the other are was slightly wanted D-123- Frain 1280 32%.

Otton 480 12% Challe 2240 56%.

BK on Mixing -

35% 15% 50% 100 Cotton 600 Chall, 2000 Good but mae nowin than needed

Reptiz-18 csis Occumulator weight increased by old platters! Dept 13-19 Rosin 1050 4/5 attan 320 8% Challe, 2600 6570 botal 4000 100% OK outring- is while 126 Blank-circulating water in press 47° over 1956 Aydraulie pressure 925° does not stick Circulating water in press 55° countering water in press 55° counter 145° counter 925° does not stick.

marks on edge 1/6 mil from feel on each face is inch from edge line appears on blank body broken aways distance about " form adage " of to our the edge some as 129 but average 2" from edge 1/2 to 2"/2 from edge

Rosin 960 g 24% Cotton 3209 8% Ohalh 2720 g 68% 100

Sec 114) 525 \$ Blanc Fixe 75% Made a good consistency got. but the got in atom plate at takeen off - Oct 4-18 tuned home proportions of more 180 g Roein 45 g Ottom. 675 g Bland Fixe. 9000 1260 RZti 4725 Blanc Face 6300 Mouldo best at 118°F 122°F sticks bounded and baked printed on regular rehedule in flowly mondo oot 23 stuck all over would. See prograte 165

175 g Porsin 25%, 42 g Cothe flow 6%, 493 of magnin shirts 69% to dry will not make a got.

210 Novim 3090 42 Cotton Flac 67 448 Magnesium Shearte 700 4 tal makes a good lashing gole 252 Cotton floc 2688 Magnesimm Siliante 4200 total Warks in our at 130° Shews a lot of well ups" Sece 138

D-136 204 g Rosin . 30% b ce Stow oil 3 30% 42 gr Cotton flore. 6% 448 gr Magneim Eliste 64 1224 Aram 36 (ce Line Ole ... 252 g collon fice 2588 gl Trongreshim Ellierte

90-137 4007:000 to handle Igob put it in press in a bell - broke 0-138 too not to bandle pres of put in the pres in a ball Blank variabled and baked at 130°F crumpled up - entirely too soft,

D-139 224 Portu 3290 42 Otton 670 434 Magnesim Silicote 1344 Morim 252 Cetton 2604 Magnesime Sheat 4200

D-140 231 Persin 33% 42 Cotten 6% 427 Magnim Elicat 41% 100% 1386 Porin 252 cotton 2562 magnesium bilicate 4260 did not mohe this -

D-141 42 Cotton 670 420 Magnesium Selicate by 1428 Proxim 252 Cotton 2520 Magnesim Silicate 4200 Makes a got too coft to landle -Varniceled blank bashed at 130 F crumpled up Very much too boft

D-142
(1176 Prosin 28%
252 Cotton 6%
2777 z Magnesium Silhale bly

1320 hoin 33,4 % 2143 230 Floc 5.8 oldeldymi). 2400 clay 60.8 First Cotton too dry. 1420 Kosin 35% Makes a very much ropker got than the the old day. 230 Flor 670 2400 day . 59% dry enough. 4050

Dust Cotton Lion Clay 4200 with sion clay the got is entured, to surfit to family to family djameter out to I double djameter on the over and of the sum together .

36% 6% 58% Rosin . 1512 Dust cotton. 42-15 406.5 Lion Clay. 4200 not made with Lion clay

57% with the old clay this is about the maximum amount of youth that can be upid, 27 is a little more stiff thank 47

6% 448 Shipman rakisba Londay 64% 700 total -1260 horin 252 Collon 2688 Lion clay 4200 Total -147 made with sion clay to softe them 146 miscle with the old clay from Schack

30 % Betten 10% 70 Magneium Silicate 40% z 80 140 Blane Fixe 20% 700 1260 Rosin 420 Cotton 1680 Magnesium Pilicati 840 Blanc Fixe 4200 total, This blank made with circulating water at 110° F has a decided tendence to stick in the mould - but it makes a proportionately perfect fill. makes a good still For the stiffness of the go Draw 132 who

most liable or less liable to which to blanks when used as moulds, Sheet of each metal laid in mould in * no apparent tending to sheh Braca Hard Lubber samed nearer Coreger to sticking than any of the metals, but none were nichel stuck at all like the black sticks in the preso. Lead * Note Plater come not in perfect Tim plate contact and note quite so Hard niblen - lot as the mould, also when plates are lift on the blank to col conditions are quite different from the mould in the press even when cooled with water. plated and black shrink apart without pull outs. above tried with \$ 134 mix and temperature of water in prime 160°F. with steam on the platters Zime, Ale and tim flate stuck fact, and remained stuck 4 days. at 81916 - Removed after hamming with od block. no appreciable pullouts, but take

2150 Cotton 100 11/0 40.5% Chall 1500 Weigh out 3 lots of cotton 500 each. added anthon and there with winding buyon quadworting only intily mital Weigh out 1000 Th 500 mon Kum wigh out 4 lots chalk 500 each Blank masked 7 150-A - was - was afreed - 2008. I will have now · Hert eine Cotton 700 19. 500 cotton 500 chalk at 1010 chalk 1500 403 bomished with two coats of meg varingth except that 3% of Pma -umo added. Baked 1 to 110° 1000 Kom 500 chalk at 10=0 1 th 15/200 200 cotton at 10 38 6 h nt 1400 500 dealh at 10 to 500 Main - 1845 lower on at 1120 500 gr. made uto black

2-151 Trosin. 1500 40% 750 20% Cotton. Chille the 1500 TRA (m) 400 cutton 11000 chulk - wit 11500 Kusin add doing 350 cotton after mixable thirt. then add 500 chall a little at a time, Varnished and baked regular did not had on amp appointly Printed regular - full print but noin struck out than the variety all over music N.CT, Toomuch Yhorin, Exemined Trov 4 - fine eracho all over, See 125

Rosin 30% Cotton 30% Challe 40% 30% 210 gr. 24 210 gr. 280 gr. Time on rollo -Too dry - crumtled on rolls. dry and anuly.

D-153 Plosin 40% Botton 30% Chalk 30% mix on rolls -Wade a rumbly mis - put in proco with steam on platter, mak a very shiny thanh but stuck slightly. Tuedo more chall. See DISC slightly. Treeds -

D-154 water (1700 cc) Stand 300 9 Cotton 400 8 Chalh 1800 added death and cotton gradually gave a beautiful smooth him in one how. but too wet; van mixer 3 hours more to -used solvant mapthe on monds to prevail stroking. Blanks and up when wheid fast on pieces of cardboard. Composition is porons and faint istim is porous and fainly probably not plastic under lest

117 g glue glue soaked in water over night and warmed rip till 1800 g chalk dissolved start q 5 km oct 10. ally be ? all cotton 3/3 chalk } 200 ec water added as mis was all in fine balls about it diam, 5886 chalk add 122 hu not more to blank I not enough the coloring the 20-156 Prosin 35/76 cotton 25% Chall 40% Mixed an Nolls -commun but makes a solif age was maked Baked regular hake in 24 puilling I very alight warped

2000 a Alun ongstab melted and entirely displayed,

put in large mixes with soog chalk

and 200 a cotton. Italia the

machine before completely mixed made

inpurfect blanks, study to cold mould.

N. G.

385 took a very long time to mise and then are in could falls, that atmost together Or in blank. Posin 149
Prosin 149
Prosin 149
Cotton 119
Chalin 7. samila cotton and chalk inter minutes more and mixture seems complete. 200 Pulls out in string moulded had with press platter water at 155° F Variabled and baked regular - fell door and commisplied up completely.

630g 670 252 6490 2688 Circulating water in proces platters 158°F "harmenleed and broken regular warped about I" ant of plane

2-161 Rosin 10% 709 Manila 10% 70 9 Cotton 10% 70 9 Chalh 70% 490 Mixed on rolle - did not leave the rolls at high enough temperature to press out into a blank. mixed my earily,

2162 Marila 1290 84 Cotton 1090 70 Chalh 6670 462 got in all - too dry D163 1300m 9970 Manda 2199 Other 1996 Challe 6295 90 g chair would not to

D164 Korin 12% Wianila 13% Charles 15% charles 15% put in an bounded and bable regular

two old besel rings one left in original fram and the other felect off all except a rom normon relage and invited edge to cart off;

with prints mostly smallel he as mends.

D-165 - 20 also 163

From 8th 56 g

Manila 22th 159 g

Cliffe 8th 56 g

Clash 62% 439 g

Worked 99900 - got looks a

little dark in color.

Variable of sub taked regular

Rome Iquel 336
Manita Copal 924
Drust ortin - 336
Chalh - 2604
4200

100 h City hat gets explore with Congression and paked regular

Printed regular - best in flack month of the other side - Fall print - other in Glack month of the Garage of the state of the state of the side of the state of t

to sticking on edge of world holder,

(125)

Manila 32% Cotton 870 chalh 60% Francisco som to leid regular personal filet -Cradhel in removing print from marked - beautiful propert point attended -I mint anothed in mould

70-167 Harila 30% Cotton 8% 62% 56 chalk 434 Made O.K. Klank, barrished and baked regular remained pageoth flet. Vary misth surface but crashed in pres and stroke on label -

2168. Gum Olibanum denatured also had hissola not soluble to any extent in my Rosin, Solout naptha manila lopal in Stravie acid. Acetic acid Turpentine disolves most of it and water nearly as Kenzole much as acetic said. all of the ordina Bay aldhyle solvents for grows dissolve only a small parties were when beated. hitro Bangol Palmitic said acetic acid dissolur a little latter than boate Heat decomposes nearly all of it before welting. It is soften than kenway at 100°F. (cheving it) tastes like rosin acetone ammonia 23 Jeophus some to be a mixture of room and a very mustable water woluble substance Olive acid Stearie seid Trichlorophenol amije acetali straw oil,

7-169
from 85 x 56 y
Marila 245 118
Cottin 850 56
Charles 855 420

Resin 336 Manila 1008 Cotton 336 Challe 2520 4200

D-170 Stanie Acid 8% ×7 Mairla 24% Cotton 8% Chalh 60% Very sticky stuck to mould lechow we're after I'll hours still eight mough to lend tough almost like ellaberd, too much theory want sums quary

2-171 8ct (9-1918 Staric acid 2% Manila Copal 24% 168 Cotton dut Chalk Left miger cleaner than any other mixture. I made Dil . Mante . Water 106° F-Sof 21 tech large mixer Shit reducing value ant of order delayed and total martila 1008 9 atten Bust challe & cooked to much made too dry mix. Out 22 tried small mix again and got too dry due to slow worth something costes offer or a chun change then place, burnelled and baked regular warked in teaking Print QK. except 18.0. on label

D-172 Stranie Acid 3% Madria Copal 24% Cotton 8% Chalh 65%

Floke Kaythaline 37, 219
Manila Coyal 2470 1556
Cotting 5% 569
Cotting 5% 569
Chalh 65% 455g
259 chalk liftent could
met get it in to day

Flake hay Thaline 4% Manuto Caplal 26% 1
Cotton 80% 1
Challe 62% 1 Cotton 6 % 76 18 6 Chath 6 % 76 434

Made a blank but too dry Made OK, point no each of that P.D. on level on one side. Sinfan of except for defeats apparently in mould. Flake napotheriene A Stranie acid 2 Manta and 24 Cotton dust 8 Chalk 64° Mark O'M blank but to atiff to band and baked regular warfed in baking Politice 1:0, on our state in war. Examined low 4 - adaround margin sum mottled as if it was going to each later like D-151

D-176
Flare naphalen 270
Strang and 270
Rosin 270
Mantin Copal 22 30
Cottan dust 8 90
Challe Print of ex, p.O. on lated

Strang Arid Bosh manita lopal 924 336 Chalk % 448 2688 Made O.K. blank - good was too stiff to Varmished Paul ok y poin leble on and sail and lane post on runsic apparents defect in mixing small Print from large Tringer Marshad D-177 H.M - OH ac \$ 90,000 label

Variable and bathed regular wayled in harring full acts on latel and rearge in latel and rearge in the latel and rearge in the latel and latel and latel and latel and latel and latel 178 hours.

too coftToo you had been the form one of the state of t

D-180 Staric Acid 676 42 Mante topel 1870 126 Coffin 800 56 Chalh 6870 476 89° 56 687° 476 100-700

Combinations with Mounta Copal Combinations of other Palmitic acid mixes in all proportions. makes very soft in large auto. Smaller Colya Oil mixture will bead but still my bittle, Cotton seed oil Soft Mexican Applelf mixes in all proportions Sesame vil all dispolar manila Copal when all very brittle. linseed oil Fine Starate - dissolves but does not alter hot and large auto zuche Poppy seed ail a reubber like mais but Castor oil buttleness, when small auto are used Tetra chlor napthalene disolus but des utt Palm oil. alto bittlenes, turns whitish after 24 hours. man bends but is very Cocoamut ail Camanba wax dissolves - no apparent do neats foot oil buttle . cling wood oil Cling wood oil. seems to be the best and Tapan wase disrover, frame, sticks to flate more to sow not alter bittlener, castor oil next. Spormaceti - insoluble or nearly insoluble. Parafine will not mix with Manila Sperm oil - insoluble or nearly insoluble. Show oil mixes and coftens but is apparently not a solvent as it turns whiteish on cooling Bus way not a solvent, Stearie Acid methyl Ester is the best robust cofor Chinese wax, not a solvent, small amount required to raften liave Palm wax not a solvent. "tay king wax" (probably Mythe wax) fin asbeet properly clear mass, Small quantities do not remove the Enttle quality of marila Copal. but bittle in and auto Tallow solvent but not quite so good Heranuthy Notre amine 6/4 makes framy light from as stravie scid. hittle mass - seems to com Para phenylun diamene black bille mass. Stravic Acid) Palmitic acid all good palmitic best B napholipa napthol - disobe and have a slight saftining affect Olive Deid Benzoil Acid - disolves - softer. Diphalt oil fine solvent but bittle in

D. 181 Continued Tannie acid - (insoluble) 2181 Continued. Tartario acid disolars . leaves the dish- us other Rosalie acid - disrobes physical change if any at all, whenisal Change. Sodium aestate & does not miss acetanalid-discolos- no plugaical dange. Cupic Dumonim sulphate partly soluble no Perchlorkengol-Dioyey Waytheslene physical change -Salinfie acid- discolors but emptalizes out on Boric Acid - dissolves - leaves the dish- make cooling: the roin coundirably stronger Copper Strandle dissolve but heat required to make fluid reduces metalic copper -Burgoie Acid clarifies and makes so that it will bend without breating. seems to per sterie acid which Bem Phenol softens something like pland. softens the hamila & val. Rosin Josep - makes as brittle as rosin lesses Renel - softeno but requires a large aut. Bullo hit mines well is very trittle if hard enough to be Just about half in as hard and brittle as Trichlorophenol - has slight effect. Rosin soup (with no fee alhali makes the mass almost as filtile and weak as some Saponified Manila copse - asposified with caustic Enole shout 25% used. double pringitated with self-washed and dried Benjoline -) canes the dish - no other physical change acts like rosin soap. Anthracia (crude) disrolare-no appreciable plays change Para chtor anilie - softens ouly in very large auto Carbayol - dissoluco -. Alexactionathan Britle i no physical change Benzidine Base Phothetic Aufydride " Satorified Milmour Brun - 25% shows no appreciable effect naphalamine " aniline oil makes very tough rubbery moss

D-182 Vermens Oct 6.

Appliedt Oil 476 28 g

Wardle Egal 2476 188

Cotten dut 876 56

Challe 6476 444 (199)

too dry 589 would root go in

Sec (184) 2-182

too dry see D-185

2184 apphaltoil 4% 289 Manuta Copal 28 % 1960 Cotton 8 % 56 60% 420 taken discoth from mixed to person the south while the England sunface as perso within got in large light color.

D-185 -Being Phenol 28 g. Manila Copal 182 Cother dust 56 . 4% 26% 8% Challes 434 Variabled and Babed regular warped

Boing Acid Cryst, 4% Mainta Copal 26%. Other Hast Chalk a little too dry but made an barnished and bakedreg did not wany.

200 (D179) and D-186) Bonic Acid cyclals. 4% Manila Copal. 26% Cotton dest. 4% Bas black. 14 Magneim Shorts 64% Printed Claube without varmishing - cracked and shoot a tendency to which all over but surface about as good as with variousled blanks.

Bonic Acid Cryst 470 28 g.
Maruta Copal 2576 196
Cotton dust 476 28
Magueium Scheate 647, 448
100 700
Variabile and baked regular warped
altert species

D-189

Asphalt Oil 4% 28 9

Bohic And 4% 28 9

Manila Copal 28% 1960

Etherschiot 4% 28

Magueria Silverte 60% 420

Too Too

Boomisched and lesked regular ommisched up in over

D-190 Bonie Acid 4% Steenie Acid 2% Manila Gual 26% Cottan Blut 8% Magueum Eliaste 60% 420 D-191

Bonic Azid 4% 28 e

Mazila legal 24% 168

Masol 4 28

Cotten dust 8 56

Magana Silecale 60 420

100

a lettle too dry

too soft - May 120° -etich to Misheld shiftly primited and baked regular -felded these times in over very coft.

Nov12-1918 D-193. 1720 9 Chalh 2280 a wood flow 480 a Rosin 4 wood. 57 1900 g Keroeme 100 g Alcohol 80 g garblach. Gasblook Kerorens heated an stramplate alcohol added then Rosin (ground fine) stored in until all is dissolved bood from put in reiner first. Book ablat something to the chall righted our shall righted out mixed wall then gas black added and mixed wall then gas black added and mixed wall old is unifounly blacks to much was then for the muster capacity and many was not as good as with a smaller batch see opposite page . - Put in bacum 355 Pu Than presence on paus (35 ly, 281° F Made a blank-oil stewed out all over peress with most of the

Proin 15% ×7 105 Cotta 8% 56 Challo 77% 539 Small very ground How coffee in a sund presented for regular second - morrowege places cotton of how there the grains. CIRSI D-195
Macila Copal 10 % x 7
Roine 10
Colon 8
Chalk 72 d and moulded like D-196 (22 \$12 5)

Manila apal 13% 7 91X6 546

Prosin 20% 140 840

Cottan 15% 105 630

Challe 52% 364 2184

Sheet of white blotting paper prepared for \$2.13 - may 31-1918-Coated with 2 coats regular. side of a D+125 blank and printed regular, one side Votuck on Palel and po, other side OK, Printed nov 14-1918

- Accumulator Data -. 6" Karn = 28,274 Square indies, with bottom disc on out, gauge reads 120 lb 18 hom of blocks 8 wts 3 20 lbsa 2580 lbs 2500+2827 = 91/2lls, gange reads 210lls 20 now of blocks - 8 wto 320 lbs " 305 ll 305 ll 30 now & block 8 wto 230 lb 1840 w 8 wto 230 = 1840 = Yollo projin w 8 Wto 230 = 1840 gange reads 560 660 680 tat one gallon lubia in the water lang 24-18-

sketch opposite text tules Grade I Roin - Test by L. Ott, at 52° @ = 126° F the thumbouter, when slightly pressed against the rosin in a little of its own weight on a more of the room to like very theavy varieties or tar, as of C=194°F it is about like agt Centre. at 100° C = 212° F the roim adhering to the thermometer begins to leave and rise to the sundade of the water,

Mixing Tracking table motor 1150 KPM. 4 1/4 pully Spirt) Small minger 125 MM 12" peckly Eggst) Large miner 165 MM 23" peckly Small mixer drive 6" Lang mixer drive 15" Main drive jully 21"

(ITEM(S) FOUND IN BOOK

deceposed you try on Engineering to Melling Missered tell all field - extraorde in packet of cool or one few soil 3 - it have been to be the control of the

I take been consisted at the testing Admitted to the land is a light with the land, Sunda to the Verfeld.

They made his not of the hours have be seen the seen of the seen o

It sould provide the harrow most of the one's acid his provide and but harrown a dema proposition of matter to provide the state of the

after and pressing it is hot pressed twice, each think the edges of the corpus are himself offerend returned to an eventure stage in the process.

They moved from to men 200,000 to the they moved from to men 200,000 the south of the will be for the with the will be for the with more or will write when the with mother was a fitter,

- They will seeing one maniples made after the for twans weather, and havill broke out for the with worse control to to notice to notice or the work made which they come made and let me tell them which are best.

The first series are melted up in a large pot seed them desired into nother tolers it is attired nucleanizably to make it cook to just shoot meeting point throughout them somed in pair, I hay have not changed any of their process in years.

[ITEM(S) FOUND IN BOOK]

30% 120 F-121°F-124°F-126°F 32% 120°F-122°F-123°F-126°F 34% 120°F-122°F-122°F-124°F

Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments -- W. W. Dinwiddie Disc Books Notebook, N-18-12-07

This notebook was used by William W. Dinwiddlie during December 18-Pebruary 1919 for notes on the production of blanks and prints for disc records. There is one additional entry from March 1920. Edison's supervision of this work is indicated by occasional notations in his handwriting and by Dinwiddle's references to his suggestions and comments. The experiments are numbered from D201 through D347. The entries describe different methods of preparation and contain remarks about the results of the experiments, including how the prints made from each blank sounded. Several entries mention that a particular print sounded good or bad to Edison or that "Wir. E can not hear surface." Some entries note the expansion of blanks over a number of days. Also included are lists of chemicals and pigments, along with notations regarding their characteristics and sources of supply. The front cover is labeled "Dinwiddle Varnish D-201 -- Next book is 401--." The pages are unnumbered. Approximately 160 pages have been used.

D-201 Rosin dicto land in the alorholblane Fire added in Hint will and ruce there there times applied with brush to D125 blank, too Thick to flow and makes ridge from brush. Was not dry flot - dees not crack. applied with brush to regular blank in bries than with the 125 and cracks in small checho all over when dried in airs only, dries flat and crache

1759 chalk 150 g denst alcohol 150g Donat alcohol. 25 g fine shullar -25 g Fine stellae. Shellac dissolut in alcohol, blans fine Mane mixing as 2010 202 added 50 a denotine alcohol later added in paint will and men there there to-their out - then thicker than times thinner than 201 der not dry flat on D125-blank . driesflat an regular blanks . does not erach . and after 1st thinks the beginning it who thinner than 201 Vanished 2 coats regular varial laked and printed regular. Alestol seems to go into the blanks leaving the chalk dry and thick like putty almost imports to put it on needs more shallac see note on D-207 8ce 206 and 208 Cracks when dry

120 g denatured alcohol 30 g Augl acetate. dissolus in cold - anyl acutate 25 g mobile Cost-weltdand pularinged, dissolves very much better than dellar not - alaohal hot - turpentine Jabout halfas hot Solunt nextha aglible af in will not dissolar stall in put in only 145 g clay and got as with as putty. garoline wither cold or list, alcohol plus 20% Rough autate is a lette solout than all amfaitate 159 makila Capal still too this will stand up in a pile to top of beather as it comes from paint will. added soce alcohol roce annelacetate with 15 a manuta copal aga sounds good - but many

200 a devetine Alcohol With a distinct Alcohol With a fin chellar. 32/2 g fine obellar -But How paint mill betieves Run thru paint mill three times. a little too thick - does not dry quite flat too -much shellas got it a little too thick Record sounds beaty 201-210 incl. 202 is second best,

209-D. 150 g. denstured alsohol 40 gr fine dullas. a dutions from Cyl. neod, - pene gum mblun + bengol. added a little sempl in will to flack so that I could not ass three paint will easily had to open it wide to get it to pass shake it up again. then types but could not get smooth The clay separates I'm lunges on the Blank, Blank seems to opahoup solvent and take it from the clay n Co . cracks on blank. D-210

Plane mobile solution makes very amount 0000 when dry south in leaving blank bills
(mat) flat surface
good surface
se note on D-207 80 cc regular varioh 88 g. china clay.

D- 213 86-CC regular Farmish 86-CC alcohol 100 g Elmus blished Zine Wile, better than 212

8000 regular varnish. 8000 alcohol 1009 400 mich edica. 80cc regular Harmel 80cc alcohol 125 a 400 mich Silica a little 1 to High -Record rounds better than 214 - little better than regular Record sounds rough -

125 g Magneum Sheat Sounds quit in paint will like challs. Record sounds very provine 1259 Lithopone

D-219
8000 Payular varnish
8000 Alcohol1009 Blane Fixe 85 cc Physilas Fernicle 85 cc Delebel 50 g Kiechful (timega le oftenin) 25 cl regular variab 25 cc alsohol fromising - bette than regular to Nev. E.

Sec 202-219-220-222-223-224 80 ce Puquelan Van 120 CC Denatured Alexhol 111 30 cc anyl actate. 125g Blane Fixe. 25 9 Manila Copal 175 & Blans Fixe Hood-but jet Meledy in F much bette Than other side evidently due to depotice application a well crackly start. Melady in Fride

120 cc Denatorio Alcohol 1206 Donat. Alcohol. 120 CC Elemature, Meeto 30 CC Emyl Cestate 35 q Manula Copal 175 t Blone Fixe VV. good best get -1 LURECUM, MECHAEL
30 & Denyl acetale,
30 a Mahille Gral
1-17 75 9 Blanc Fixe
cracky at May but movide U good
RD at start - better them 221

One cout regular varnish 120 CC Duratined Aleshol. for companion - with z coats. on top some as all of the presions experiments, 30 cc Amyl Rectato, 40 g Manika Copal, 175 g Blame Fick, 47 plite 20 good 40 223. about same as regular

80 CC Pregular Viannish 80 CC Ochrat Cleohol 35 a Garblacho-Oravlad all one in very fine (1/10 and smaller) aread

D-228
100 cc Him rubbu solution
259. Line White
Mixed way well 25g Magueim Steat. mich very well-lock some of the solution or it would have taken more eilicate Rotten 80 cc regular ramich 64 80 cc allected 100 g "Clay Los"

80 ce Alestol 100 g prepitates challed for thick but very much with than variable containing ordinary challe. M. G. did not pint. 8000 regularbanisch billerie less crarklach. 8000 Alcohal 50 g. hobbinitore anohe.

Dec Pugvar by bise without gas black. 125 9 blane Fix. C. 30 g alemina Hydrate, barriel is a little this 1 good B.O. in Tuclody in F n.G.

D-239 8000 Regbanh More without Carblach. 9000 alsohol 759 Floringe White Seal Zine White. 80cc Pregvas & Hoire willows garblack. 125 g Berium Carbonate

80 ac Pregras 6 th Wire hithwat gardech. 80 ce Alcohol. 125 g Magnerina Silecati. 80CC Phylas 646 bisc willout Bar black. 125 q Lithopour. only fair

80 cc May var. 646 80 cc Newhol 35 g Kisselghun. too Hinch only fair 19 9 44 200 9 no Denatored alsohol, Abahen in flesh to discoler and divided into two equal parts by weight

1/2 of borrich D-244 (1579) 50 g denatured alcohol. 200 to blame Fixe. gain - a little letter theory, 246-6 two coats V. good 246-C time conto. 9-502twithout region on top 296 - C - barriole coasts on fine readial crashs - but sounds. very 20pt -Inguousn of head

D-248 1/2 of Varior D-247 (1579) 20 a Shaturd alooks 200g Blus Fixe _248 a- one coat + 2 coato regular chere _ \$00 b 120 costs

2-249. /201 Danish D-247. 35 q. duratine alsohol 1/2 of barried same as 2 47 blane fix & - gas black. 200 g Blane Fixe. 250A - one cost. for good - land with reg bu 250 B. Two costs 249-C three conts. long sunface

25.1 B Two coats. + 2 coats regular 251 c Two conts + 1 cont regular better without regular an top , - Two coats. + 2 coats regular Two costs + 1 cost regular better without regular on top

300 g blane live 4. g gas black. 20 g dustined alcohol, 252 I four coats. But with try only of any so for that had regres on to.

1/2 of variote same as D-247 (1879) 100 g Blanc Fixa 4 g Gas Black. 253_A 253-/3 one coat top coat reg-Vlo 2 coats lond surface 0 coats lond surface In of barnish same as 2247.
20 g Model.
20 g blave Fix s.
4 g Coas black. lond surface with reg out of lond surface better than losts

D-255 200 g Holveit najolla. 1.00 g Klaud Rusin. from the naptha into a ball -

D-256 1/2 of cominh lite 247 50g kenaturd alaohal 200 g blane fixe 1/201 bounds libre 247 60 q denotived alcohol 256-A - one cont 266- c three exates peror

* Critical proportion of Slave Fixe. 2-25 9 Varnish like 247 100 g blane Sixe. 259-A looke gilles but is search a real surface fair to good Got 5 lls Pland Prein let X122. Disweit 45 see Fre Pland 16% Nos30-1918. marthis on D-260 et agg. 260-5 @ 2 wets all pulled out n. G.

1/2 of barriel like 247. 261-13 - 3 costs bette than A-no era

D-263 1/2 of variable like 247 100 g flend Resin. Coats well dried before another coat

7-265-1/201 barnish 364 150 g blane F, xe -take //of barrish 50 g denst sloobal 200 g. Blane Fixe 2009 Alcohol Coats well dried before another coats 265- A 266 B two coats, 2 - 3 coats

200 q Alwhol 6 q Hunol 7.8 g 6/4 2 q Para. 268 A - @ (sue coat 269 - there I coat 268) both much more absorbert on one side

1270 1270 1/207 barrish Khe 268 150 g blene Fixe. 269-A 2 costs

1/2 of bornish like 268 two coats. Sourido DV. good Decy 18 2 coats Samuels V.V. good Dec 7-18 a little letter than fin to good Jam 16. fire to good hack blank mould juille

1203 lot of barnish like 268. 158 g dry white lead odd Butst Area, Atfordo. 1/2 lot of Varnish Like 268 150 g Varnish makers Lithways - Nut Land Co. a I coat B-2 conto fin surface good surface

1/2 of Varnish like 247 150g Red Lead 1/2 of barnish like 247 271-13 - 275 Coat of 278 put an first then after 2 lors are sout of 276. 272-13 - 275 267-A-275 only 259-13-275 nearly fair to 263-A-275 fair to good dan to good 258-A-275 fair to good nearly good

au 276-277 D-278. Varnish like 2.47 100 g denst alcohol 400 g Blane Fixe. 277-B- @ 2 conto 277

1/201 barried like 247
100 g blace Fixe
50 g Lead Chromate, 100 a) Blane Fixe ov 21 red read oneoat 278+1 coat 279-8 280 B - 2 coats 280 poor 279-13- 3 zconto 279 faire to 268-A-2793 - baked byone 279 coat, arobles (good genery) 268-13-280 } baked before 280 coat. 263-13-279 (crackles fin to good que our 266-13-279 (while exchles fin to good que our 264-B-280 not full from 280-B.F. Blane 8've multid in by to the power of blank first + 100 + 200 280-A 1000 280

20-282 1/2 of barrish like 247 100 g Blanc Fixe sog Red Gods. 5 blanko zcoato marked 282B Lead feroxide should have been Dec 10 - 11 A.M. 281 Thubbed into blank equal parts is and triled oil. and put - taken out of over 9 Am Dec 12 Sec 294-295

D-283 V2 of bernish like 247 100 g Blane Fixe 50 g Lead downate. 5 blanches 2 conts marked 283-B

dina wood oil rubbled into two blan 2-285 - 247 1/2 of Faminol like 247 24 g Trussian Holice. put in ouch Dec 11 - 920 Am. Etta good Van 16-

Varnish makers Lithage Thy White Lead Old Dutch Process 3 barnish makus Red Lead 4 Flake white feed (How from) 5- low acetate of fead -6 Sublined White fead. VIllane sauce small enget 7 Sublined Value Lead fine and less engetals than & 8 AAA Brong mineral 9 Red Lead Petro 1 march 4, 1920 pulled up the dry parte 10 Pawdered Lithouge Certer White Lead markle dust 12 Aufer Whiting L.H. Butalen Co. Vfine V. V. Jime 64 Chrome green 21 Carbonate of Magneira

2-288 Vr of barrish like 247 1/2 01 Danisch like 247 108 of Silland Blue Gad (Lagle Pilden Head C) 288-B @ 2000to good to very good - Jan 16 Jacce UV ga

D-290 (800 D-281) Plain Blina wood oil rubbed into 20 g Boiled Linseed oil until no more would put in over 1030 Am Deell 4 q Proxide of head - } out of Am Dec 12 Put on thick on one wide of plank - too viff to do anything with it. Hearted blanks in over and reheated mixture and put on with wides of thank but still too thack. Put in Oven 1130 Am Ocen at 12 took out of over and wifed off all surplus that I could while hot I put it buch. - too Mich - can not get ito

Plain lineed oil rubbed in with fi Part in over 320 Pm Dec 11 (1) at 9 AM Dec 13 292-B Thinned with agent part of denot alcohol and applied with & brush But in som 22 Pon Der 11 out Que 13 -9 Am

D-294 1/201 barnish like 24,7 150.9 Carter White Lead. 1/2 of barriel like 247 1609 barriel rushus Pres Lead - Nat Lead Co. Extra good Jan 16 fair to good Jam 16 good Jam 16

2 296 % parnich like 247 (sur 1) 40 g Florence White Seal Line White 75 g Cutter White fund. 297 - @ 2 costs good - Jan 16 296 @- 2 conts fair to good Jan 16

with finger Put in own 1040 Trubic 13 out at 42 pu Oce 3 out at 42 pu Oce 3 20 cont blooked funcion of put on worm blacks and put back in own 5, pm Jose 430 Pm. Dec 13 Dec 305-306 out 4:30 Pm Dec 14

one cost poiled lineed oil ruther in with fingers Put in own 10 45 AMDER 13 But 4.30 PM Gel 14 But in Gran 10 4 5 Am Die 13
Aut 10 45 Am Die 14

D303: some coat China wood a one coat dima wood al nibbed in with fingers Pathin over 10 4 Am Dec 13 mother in cirtheringue.

Put in oxen 10 45 Am Dec 13

put of over 430 Pu Oce 10 Rec 206-206 enst at 4:30 km Dec 13. see 305- ma 306 worm blanche and returned to oven 5 P.M. But 4.30 PM Dec 14

D-305t 1/2 barrish like 247 128 g Flake white head (new) swith fingus ... Put in oran 1045 Am Deo 13 out 1045 Am Dec 14 Acc 313 and 214 292-A-305 292 A with 2 wate 305 292-10-305 292 B with 2 wate 305 293-305 293 with 20016 305 298-305 298 with 2 water 305

D-306 Dec/3-18 /2 Daniels like 247 150 g AAA Cranige Turnal legistion 12 Varnish like 247 150 g Lithophon 292-13-306 = 292 B with zanto 306 9000 293-306 = 293 with 2 coats 306 293-306 = 298 with 2 costs 306. Allego only fair jam 17. 306-13 = 2 costs 306 god for 17

D-209 1/2 bannich liber 47 120 g Blanc Fixe - I fee Smill Ala. too shirld - and one count put on D-308. 1/2 of bernish like 247. 34 g Alemina Hydrate. 10 cc alcohol

D-311 1/2 bet of barnish 247 24 g Alimina Hydrate. D-310 / let of barrion 247 / let of barrion 247 yet a special tome black the buth to 250 a get on too thich put on only one exot. @ 2 custo fin to good Jan 17 bery good Jan 17

1/2 lot of barinde like 247 150 g Eagle Vittle Kod Lead. 3/3 @ coats fair to good fam 17 Viscosity of barrish 150

D.315 - Varnish Dec 18-1918 new lot 5 lb flowol Riem 1/2 let of panink like 247. 150 g Pagle Pitelin Lew B. Dublind Whitefur. 314 one cout 3 oy - one cout 314 tellething god D-315- Dec D 247 two coats 314 outop. 200 a Alcohol. 7.8 \$ b/4 1 q Para 00 to Phenol Resin Viscosity of barnish 320

D-316. 1/2 of Varnich 315 -150 g. Eagle Petaler Med Lead ... D-317 /201 banish 515 -150 g lagh Pitcher Subtimed White Lead, bisevert of barnish 350 Sec 3/4 biscocity of banish 132 ree 313) barration in brossity so mainly due to confirmation in will , for same propresent . 316 and 317 were made from same lot of barnish - and 313 + 314 hore made from White lead is runde fin red and stony suspended man greater viscosity of white lead variables

2-319 1/2 of branisch like 315 100 g Vlhamarine, too Heids - person only one D-318 1/2 of barriel like 315. 175 g Barrien Chromate.

2-320 1/2 of barried like 3/5-75 of Oltra marine-2-321 /2 of barried like 316-Stuck & Twonth broke D-323 12 of barnish libre 315 -50g Badonhum Enephide -4-2 cents

D.325 /207 Variable like 313 - 1309 Eagle Pitche White Lead. 10.9 Strontonen Chromate. 10.9 Strontonen Chromate. 2-324 1/2 of barnish like 315-1309 Lithophone. 109 Cedemine Sulphide. 109 Vetra Vecarine.

1/2 of barried like 315. 75 g Engle Atten Markens. 25 g Cadminum Sulphile_ brilliant gelden gellen befre bahing , Sounds a little lette than good' beautiful golden record - 1/2 of barrish like 215 -150 g Blane Fixe

233/ 1/2 of Barriel Like 315 -50 of Florena Whith Sud Zinc Whit-16 of White Land. D 330 /2 of barnoh like 315 145 g Lither

759. While Lead 759 Bline Fixe with pop varied like 215 50g Flower White Sail Time taken 75g Lithephones with 1/2 of Barnish Cho 315 Sounds V.V. good W. E can not hear surface after I'm from start you 1/2 of barnick like 315-100 g White lead, 50 lg Florence White Seal Line White. 509 Briled June oil 50 g Thom puton stem pale will brown dissolver. Thomby nubbed into regular blank with friegns. Air died mill Jan 2019 April. put in onen at 170° mill gan 21 1032 Som ru 3 36 and 207 also

HISSELL D-335-B Jan 21-19 1/ Let vouriel like 315 Cadminu Delphide 1.5068 00 11. 2750 top 297# F Jan 22 1035 4955 temp 292° Jan 23,345 R. 5050 temp 78° Jan 24 4 P. 4870 temp 205 115 Pan

Ja bot of Danish like 315 25 of Cademium Sulphiche 75 by Lutio phone D-338 su aleo (320) 12 let of ramicle like 315 759 Viltra Marino 7.5 g. Layle Potelue Red Jez 25 g. Cadminum Dulphide D 340
235 g Reg. Varmish 1 g Boiled Lineard Rit - 12 lot of bound who the story of ap chime yellow much. Worther C.

D344 1/2 lot Bernich like 3/3 100 g Clerone green Grider 6L L.H. Butotre Co. D 243 /2 bot namind like 315 - 100 g . 27 Abrown Zellow Bark . St. Barther to . 128 out our to south into blanks much more that 341 or 342 and considerably more than 344.

1/ let of D-345 (201342) 1/ let of Demich like 315 100 g cp thrown Ellow Heed D-346

1/2 lot of barnish like 315 g hecipitated lalaium Carbanata
L.H. Butatur lo

Tampeles of Requests - Varyles of Riqueto. "13" Carbon Black L.H. Butotus Co. lette Jan 23-19. 2 Binney Fruitle no , Que black Special figurent (500 rueste)" from I fee Smith & Feb 17-19 clay - The Allas Co. 25 Beauch Street, 72.3. 1000 ton -6 Rotten stone "Argillite" Elh Chemical Color Co. Ridgenay.

Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments -- W. W. Dinwiddie Disc Books Notebook, N-19-01-10.1

This notebook was used by William W. Dinwiddie and his assistant Henry E. Thayer during January-July 1919 for notes on the production of blanks for disc records. There is one additional entry from October 1919. Edison's supervision of the work is indicated by Dinwiddie's references to his suggestions and comments. The experiments are numbered from D401 through D467. The entries describe the methods used in the manufacture and preparation of the blanks, particularly the baking process, and contain remarks about the results of the experiments. Several indicate that a particular print sounded good or bad to Edison or that "Mr. E can't hear surface." Also included are lists of clays, along with remarks about their characteristics, sources of supply, and prices. The notes indicate that W. R. Simpson assisted Dinwiddle in some of the work and that Charles T. Dally used some of the same materials as Dinwiddie in his experiments. Pasted into the book is a one-page note by Edison pertaining to a patent on a shellac substitute that he wanted Dinwiddie to try. The front cover is labeled "Dinwiddie D-401 -" and "Disc." The pages are unnumbered. Approximately 100 pages have been used.

11401 70 g garnet lac grand in coffirmill 35 g rosin fine grand 280 g 701 Denat, Alcohol. Shaken in flash until all dissolus. 70 g. cotton dust. fine china clay - "Southern" f 977 = 848 70 6 70 6 added the clay so

168 alcohol 24% made a very with mix - Our he made with considered few alcohol. Evolve up into small pieces and died in vacuum drier for 2 lours - Rung being wied by "blino" at same time , only 18-22 vacuum. Steam 10-20 bls au plates. Trade an Down Jan 13-19 - too out -

D403 of garnet lac 6% 42 g Often dust 6% 588 g Chalh - 84% 100% 1689 Alcohol. Made 3 Rx. blanks, Jan 3-19 one frinted gave full outs all over. Costed the other two with reg variety Jan 17.

2 404 709 gamet lace 499 rosin 56 at Cotton dust 700 1759 alsohol 3 blanks oft, except for five marks like above apparently crasher - Z coated with my barrish -Sounds V.V. good Jan 22 Mr. Elison can't hear surper

alcohol 1750 Made 4 bla coated 2 with 288 barnish and 2 with reg namical -Jine orache showed in two of the plants similer to the enach in Hot but not so numerous. En blank is still too rich.

D406 Garnet Lac 8% × ; Krozin 4% Otton 8% Chalh 80%

Our printed full auto an margin and Various to cracks 2 our radial from edge seems to be in blank M.G.

Games Love 4% X 569
Kozin 8% 554
Chialk 80% 560
Alcohol 1759 -

C13

Boise margin - looks good much lander surface them The fruits oil done Dally is many and a little smarelan majular

Garnothae 870 × 7 56 gr.
Procin 4% 28
Whom 870 56
Whath 80% 560
To 0
Aleshol 1759.

D-409 Barnet Lac 870 × 7 Rosin 470 Lincuid Oct 170 Cotton 870 Chally 7970 CN. Kilondo exercit P.O. on edge -Conduction regular 150 g Aleshol -

Cumerone - Rosin Koppex Moulding & Sample \$4548 from H. Koppers Co. Laboratories Thank and Thathery State Pittsburg . Pe. Solubility. dissolves very freely in Bengol Bolunt naptha Solven 8 7 rapte X Carbon brensphile, carbon Tetrachloride, anyl actate. Rosen. * Alcohol will not dissolve it stall Kerone dissolves a very small fraction cold Straw oil is not a colvent 168 x21 Cotton . V 21 Lineed oil dissolus a fraction Spirits of Temperative dissolus a large fraction. with Carbon bisulphide a small fraction Solvent naptha - 175x3 = is undissolved though most of it discours very quickely.

20411 Asphalt 12% Prosino 8% Cotton 20% Challo 60% Alter 20% 100 Soluid Najilla 150 g Morde 4 thanks of this and go in pall will - after theying in Darmolud Feb 18-19 completely and, longer is make bring one

Experiment to see if record may be perlited ine hot press and transfer to cold prus to cool. Made two OK- print by this process one required 40 see to transfer and the other 30 ccc. showing that if p rigged up side ty side there will the no difficulty to operate quicky enough when only punding them is required -This was to test out scheme suggested march 27-17 and filed in Legal department. double hydraulic press-Hot press an one side cold press an other side superate ramshot press - to obtain lighest temperature Oil will give higher and more constant temperature than steam,

413/2 ! chima wood ail? heated in casserale over 20414 1009 China wood oil Motions to \$100 F then at cool - Heated 1000 Am. Start. again to 610° F - materially thicker fut 1029 melted flowe of for about 3. not condensed. Heated a third time to 610°F and cooled. seems somewhat 1025 300° elastic when drawn out in a thread of 1028 350° 1032 400° springs back . 500 Adjusted fla 500°. 4750 4960 1133 5060 1145 5060 508° Gas Off. Cold - buy sticky - not elastic A Meltil and prived out 100 g fr (2 558) Started to heart remainder, 1,22 pm. 510° Adjust & flame down 129 530 502° 137 500

502

1043 5 35° Melted on Steam plate 250g Prosin in 250g Trung oil. 1046 5 35° Started over Buren flame at 4 Pen 1050 537 403 Pm 2300 4 22 370° let bog 445 435 about 10 g left in casserale. 549 460° Abo off 820 Am 4x80 = 320 832 390 g total from sough start. 250° 834 280° Added another burner. 855 110 g loss, = 22% 500 919 490 940 490 955 510 1000. 516 Su 0560-Off and The acuted out 3 lots of 80g 1005 10.11 3650 1013 400° 1015 440° 1000 520 1021 530 1028 500 1001 490 1032 502 1036 5 30 5 35 1038

April21-19 250 g China wood Oil 250 g Rosin-Start ool 955 Am two Brusen & 1000 250° 10 05 All rosin just melted 305" 1009 385° 1000 4000 1016 4650 1030 1023 Flames adjusted down 510° 6150 1024 1025 off weighed and 80° for D-560-1 416-A 520° 4450 1029 started again 4450 1020 Flames adjusted up. 460 10 33 470° 10 35 492 1039 505 10 Flames adjust down 500° 1044 495 10 47 416-13 502 1051 10 53 50 11 03 416-C515-11 08

all histed to 350° and cooled to solld - sticky - bittle - pieces jullon with function like norm; 4 to lightly but norm;

96° F started 5PM 4/29/198 7/2 lls Xinseed 7 Am 4/30/19 \ 14 hours 13 hour cleared up and 625 Pm 4/30/17 cold mother by (23 homs) Stew started acrid odor, 915 Am 1/19 Amall but bles drifting around "istolet after 17 hours butbles come off. 1225 Pm//1/19 stopt - 26 hours - Thick as honey Started Monday 8 40 AUG flows like boney does not be A run stiff well but no about thour before solid bubbles stop ing (mess or to Jones 2) - 9 50 feet, James 2 - 9 50 feet, James 3 - 1 24 pointly one of 7 52 feet. Sharp och starts (13' 310 feet. Sharp och starts (5' 310 feet. Sharp och starts (5' con (16' 23'''))

Steam presure chart Air on 1122 Arm Ju Steam cut off from from beated up and ottaked again Stopp of splashing up 90 15 70

D-421 Blowing Bonn in steam jacket mixen, June 5-1919 Blower stories 950 Am stores 1,22 P.M. Steam present to low please 3 12 beylot steam 15 Ms Stram guessine very variable 50 to 115 lls Multing Point increased from 186 to 194°

Start 920 Am May 5 - June 9 30 AM May 6 -24 horson A little more sty/ Jelly than 418 D423 -Blowing Lineard Oil 5 gal lot from Hacker

start 920 ATM, June 9.

a 82 An Sharp and is very evident and oil has cleaned up, off at 320 Am. 1 Start at 900 Am gue 10Blowing June Och-One gallon "Atlantic" linsed ofl Motofick, 212 Pm

Blowing Inces Och -One gallow Atlantic Linear Mothers, Sterlagam at 9 12 Aug A

trigles out 5000 g) of room what had been metter and strained weight 46589 taken from the pot not counting trever (small complex. 6/2 % loss Completely solution Bearol Completely ashable in Henatured alcohol. Completely soluble in Turpentine (a little se about half woluble in tecurine a gray (dry). readily disolate large humps of the rowin This powder involuble in Benjine in completely soluble in denat, alsolol, When stocked is confounted off one stien plate. a clear resin is lift, brittle and weak like common Bearin, when all ofalcohol is out but it is very difficult to get rid of all of the absolute

Drivedle

John has balined a

Shellas Gulolitude

Oxdrak Rosen, his slerg

out Colyphatine part by

Benjol, Patrolam Bargene

The hollas leke accorphan

Rosen these street of

diot by desoloring in

also held filloring in

also held filloring

hy it when you

Tuned of smell benev and tuned down large burner 250°F Turned-up gas -250°F Lighted ourlet burn 330°F Small burner of 9 35 My 3 20 no rosin smell at hand cake formed one wrights and off and and gas

at (320° F?) Nep. 174° F ty Lott again started melting 950 Am June 12 Started blower 10 27 360°F 1036 350°F 1047 .3 80° F 1052 395 F 1100 . 420 F 11 15 40.0° E 11=7 11 33 Turned down give little 11 42 Themirmeter broke about 400 = 420 to the cu Mothing point determined by Drings con 2770

D428 Poolin

5000 q. I nown from barnel Trictled and 500 q. Seak personice added along in fine personal - othered in the forward of the forward of the formal of the for

D-429

5000 g I Beein M.R. 148°F (Singren)

Tolorid to rest 10.15 KM June 13-19

Start blooming 10.00 Jm. 350°F

Sample ant 1222 M.R.

Added 500 g New grounds with 1222 gos off,
gast reduced at 1222 Tamp went told

400°F during addition of Lead phooping.

Maight tolde ant of public 4994 g

5000g Provin heated to to about 400°F and 185 g Mills Precipilated added an little at a tone and cooked mutal all the black diserted.

Weight of room remodefrom Wittle 5051 g

5000 g I Rosin from Barrel 300 g Manginese dispete fonder (ground producte) looked mittle black all disclass faming "Brown tramparent room about 400°F god about 30 rum

June 19-19 5000 9 I Rosin . 500 to Mangamese dioxide powo bout 80% Meston ground Tyrolistite and Minor added very slowly about of mind coursed the mass to I solidify to wax like commistency Taken out 3) pot 4939 g hands unalloader of for try, " tot netted arin with both kurners and stired very little. all repolicite 1050 all physolists in 12 mint dolid 5080 g hon st token he turned off burners and but can water under to cool

Rosin from Bancl 400 & Manganese Dispide Powder 1264 Bluden sate as Asidit 33 380 Floc . 5987 gas black 7500 q Procus 600 /g Manganise Noxade beent solid in get raine as 438 large burner after 10 winter, this is 4/ as otrong in Turnog as D433 7.850 9 pust in

5000 g voin | Same 25-19 300 g - (b) Ground Myslovite 1 Same armed in 455-

48919 taken from port.

-0436

200 g Praw lineed oil -

he sted in small croserolapparently no combination below 500°F 3°638 10000g Proin July 1949 700g Pryroluette, New Y Solid in pot -... 5000 g truin
350 g 7% Ground pyrhink sain
350 g 7% Ground pyrhink sain
350 g 7% Ground pyrhink sain
400 g adela pyrotneste, leasted middle
all disethed then raw temp up from
460 to prov 500° for 15 suidates,
Made by Dimptorn July 1-19
Rosin token out of (184 (4857)).

2 lot) token out of 184 (4857)

cni

me gallon (7/2 bls) raw luneed oil stand blower 5.10 & tam on about 220°F 10,20 }

This oil will take up WMO at 350°F about the same as home but rawail thes up very little WWO were at 500°F.

D440
(Blowing Lineed oil - low galley) 1/2 lls Mawail, 80 / 2000 1/2 lls Mawail, 80 / 2000 1 / 30 g about 1/6 of Pyrolucele. 2 30 Bu July 7-19

Blowing / inseed oil -7/2 ls Row finseed oil, 100 9 2 433 /20in Abouted blowing 3 PM July & added Reanates 310 July 9 junded 12420 about some as inthost drives but surface in less stilling after whost appoint to sin, active is very dark red

of Highed to about 500° Fin Cypus and of the Blue combined the rest Allend out. Later Bried them observed the into the Blowing Kettle, Howing 2 15 Bu gely 9 - Does not from like the row oil. 120 PM July 1D

D443 We los Praw Lineed ark, heated to 500 Fe and the prission blue (10 g.) previously ground in about a print of the oil is point in and the oil heated intil no blue color showe: Stated blowing Jul 10 3 Pen no fram at all out the pert -power of for whent 3 hours and finished orbert 5 pen july 11-19

2444 Oil -71/2 lls bissed ail present she ground trace steined into all of the oil in copyun kittle cold - Bhatid to 550 F - Part in Blowing hittle and started to slow at 1216 1911. July 14-19 -Very thick thank sold 8 45 - Am. Steam of cooled with water - Time 82 55 24 The blowing tube holes were all theory cleaned out with drill for this experiment. 442 443 were made with holes partly plugged with oxidized oil

3445 oil - (HER 444) 7/2 lls lineed Oil. Soustran blue ground in one point of the oil and then stired in the warhole - he sted to \$50° F 375° - 550° in 35 minutes, stand with flow Lowered temp down to 5400 Kin off. Steam on blowing healle , youred in and started air 312 Pm Jel 15-19 Desigthich 10 PM Solid - setopt by Major 4 Am -6 lb 15 02 taken aut. -5 a skins etc from eide of

7/2 do Menhaden Fish Gil-Winter Cleached But in blowing trettle and started gon securit 2' towns .
Steam off and stopt about .
Solid and roy little fish ail smellBlowing Menhader Fish oil 7/2 blo Orl
7/2 bloom (1000)
Started 9 des - Orm July 18 menhadid.
2005 Som July 18 menhadid.

at which tunz Pot- heat on time it was twinged off by bytchmone Started again. 820 Alu Monday. 4. Brown to get Solid 3 Alm Sunday 4 9 Am Aubles coming off - acid octor. 1030 Am - May Marky solid. Time 253

1/2 My plan raw linesed orl met in billward Kottle, stram on full gehand cracked, truppation more up 300 - Vigant de bungger.

D- 450

D-451

Linear Cic and Pb On

7th los now lurical six and 250
Pholy heather to patien in eight 129
Ge started heating 120
120
120
140° Started heating 120
140° Alpher held till
240
240° Alpher held till
240° Alpher held till
240° Alpher held till
240° Arid gar held till
240° Arid gar held

220° No physical change

Survey out and vanish works.

11/2 lbs raw linear one and 25g lathough heated to getter in copper pot.

the started bratury 925
346 Started to add lathery 925
350 All in 1025
490 A pros. till
240 Started blenning Down branch 115
260

Solid 215 Alban till 400

Low pressions straw was used.

C105]

4/28/19

П - 453

71/2 lbs raw linesed oil 121/2 q - Seeharg.

1014 1017 Ave

1017

1035

1200

300

220° Started blowing 240 Asid odor bruns refer 230 No physical Church

220 Sailuty thickmed - bullblers 230 Mos thick -

Thick and blubbory Air just blowing thru

D-454 7/2/1/2 71/2/1/2 the train linered oil 25 g - red lead.

Started in copper pct 310° Began to add leadd 350° All in 500° Reached at 500-510 Manhand till

Started blowing (Low Petrall) 34.

.

D 455

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$2150 parton Canton Ga.
                                                                     $2800 perton $650 est Fright.
  Mica Substitute, H.P. Binswanger 209 Broadway h3
                                                                                        mined at Glendon N.C.
                Tale Products Co. New York;
 (Aspestineda) Charles A. Wagner ("S") 221 N. Front 3+ Pula
5 (Asbestine eta) Samuel Nevins Co. (43 day) 109 5, Second St. Hila
6 (Asbestine de) St Lawrence Tale & (Tarclay) 7 E 420 St., Newyork
7 (Tona Alba) Katzenbook & Bullookle. IB white Clay 100 little
                                                                    1824
8 (Terna Alba) Groxall Chemical Supply Co (G.S. 2)
9 (Tena Alba) Innes Speiden Co. Inc (Clay 401) 46 cliff St. N.Z
10 (Tona Alba+) Payer Makers Chemical Co. Easton, Pa. (Refined)
11 (Coanse clay) Harris Clay Co. (Spruce pine Clay) Hillaboro, N.C.
 2 (coarse clay) Newark China Claylo (Noz ching Clay) Williamston
14 (coare of lines) C. K. Williams & Co. Easton Pa (L.G. V. Bolted Clay)
15 Thane oflakes) Tohn Richardson Co. Box 2887 Booton Mass. (Er. A.) Engl
 6 (course flates) Groxall Chemical Frupply Co. (G.S. 7)
 18 (care flates) J. C. Bucher, Boiling Springe, Pa.
 19 (coarse flakes) Miner Edgar Co (IB. Clay) 30 church St
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2456 Peach Kaolin Co., Box 41 Church \$1550 Golding Som Co., Hochesin, Gordon, Ca. 1000 Columbia Kaolin & Aluminum Go, Washin \$1100 in Georgia. Moore & Mungar, 29 Bodway, 743 (New Albron bashed Down 5- B. F. Arakenferd, 50 nurray St. N.Z ("D" Powderd Clima Clay 13500 6 T. Poole Maynard, 226 Hurt Building, Atlanta, Ga. 7 John W. Higman Co. Newlyork. (G.S. English Clina a 8 Joshua Poole, East Liverfool, Ohio. (no 4) 9 Rossler & Harlader Chen. Co. new York, ("O" clay) 10 John W. Higman Co. U.Z. (Potting MW English climeday \$1.508 11 John Richardson Co. 201 Tevenshire St. Boston (\$30) Potta 12 Star Clay Co. Mestytown, Pa. (Powdered clima Clay \$1500 13 L. A. Salomon Grozib Pearl St., N.Z. 2000 14 Moore & Mungar, N.J. (MAM English China Clay) 15 C. B. Chrystar , My. (A. Powdered Clay) 16 B.F. Arakenfeld , MZ. (L. China Clay powdered) 17 Stanley Daggett One. 99 John St. N. T. (B. Clay) John Richardson B. Boston. (C.P.) Potting 19 Harshaw Fuller & Goodwin G. N. 3 (Kiludias Bo 20 John W. Higman Co. 71.7. (IX English Ch

Clays - Et a little to coares - provide (II) John Richardson VI. (Box, 2897-thirtin) (X 24) John Richardson VI. (Box, 2897-thirtin) (X 24) J. Hr. Linder Clark Blankel Heatponh. (K34 Clay) J. H. P. Binewanger, 203 than Jr. (Lells Landin. 4 John W. Higman B. M. J. Singleth China Clay 5 John W. Higman B. N. J. Singleth China Clay 6 Growill Chornical Singleth. (R. G.S. 4. 7 T. Foole Mayhard P. H. I. Athank B. (No 2 Clay) 8 R. T. Vandakith B. Soo Exts. N. J. Shaumar Pake clay 9 C. K. Williams O. L. Eastor, Ta. (Immaculate powders clay) 10 Char A. Waginer, 221 Nomet St. fills. (B. (Seconfland)) 11 Inive Brick Tite Co., Pryser, Tenn. (Clay ho) 12 Rosellow of the addeduct Cleen. C. N. J. (S. W. Clay) 13 Char M. Franz him leo, (Pils Satth) folkship love. (Rose) 14 John Gole, East Liverpool, Ohio. (No) 15 Soil Lorne Gross Bennington, Bernent (China Clay) 16 Miner Edgards. 30 church St. N. J. (Satta Lee Mon OC) 18 Haumar Chile, N. J. OS. S. English China Clay 18 Haumar Chile, N. J. OS. S. English China Clay 18 Haumar Chile, N. J. OS. S. English China Clay 20 Samuel Newins Go., Juc. 109 S. 250. Reda. Me clay 19 Jess Smith Ed., N. J. OS. S. English China Clay 19 Jess Smith Ed., N. J. OS. S. P. Reda. Me clay 19 Jess Smith Ed., N. J. OS. S. P. Reda. Me clay 19 Jess Smith Ed., N. J. OS. S. P. Reda. Me clay 19 Jess Smith Ed., N. J. OS. S. P. Reda. Me clay 19 Jess Smith Ed., N. J. OS. S. P. Reda. Me clay 19 Jess Smith Ed., N. J. OS. S. P. Reda. Me clay 19 Jess Smith Ed., N. J. OS. S. P. Reda. Me clay 19 Jess Med. Smith Ed. S. Dec. 109 S. 250. Reda. Me clay 19 Jess Med. Med. Smith Ed. Sm	4.		
Clayp - et a little to coare - positoly (1). 1 John Richardson Va. (Box 2887 tontha) (**24) 2 Intilable Clark Beniels Meatonk. (**34 Clay) 3 H.F. Binewonger, 203 Edwa, N.J. (Lell Eugle) Keetin. 4 John W. Higmand E. Mrt. Pulmings Eugled Chine Clay 5 John W. Higmand E. Mrt. Pulmings Eugled Chine Clay 6 Grossil Chemical Supply G. G.S. 4. 7 T. Foole Maybard Ph.II. Albindi Lie. 6 R. T. Vaudabil K. 5, 50 Ext 58% My Shaamaa Fabu Clay. 9 C. K. Williams Oo, Easton, Fa. (Immaculate powdered clay) 10 Chas A. Waginer, 22 N. Kanat St. fills. Rs. (Swonflahs) 11 Inine Brick VIII e Co., Paryaer, Tenn. (Clay has) 12 Resident Atbandabelw Cleen G. N. 7, (G.W Clay) 13 Chao. M. Franzheimlo, City Bok My Deladiy (b) (**Ko Eyded Ce") 14 Johna Foole, Earliverpool, Ohio. (NI) 15 S.C. Young form, Sennington, Demont, (China Clay) 16 Miner-Edgav G. 30 churds St. N. I., S.C. Powdered Clay, 17 Rossilver Martiacher G. 100 Williams St. N., (S.C. Clay) 18 Haemuilly Gilleppie, 240 Front St., N. I., (Caita) Leeman CC 19 Jules Smith Ed., N. J., OBS. English Ohina Clay. 19 Jules Smith Ed., N. J., OBS. English Ohina Clay.			
1 John Richardson Vo. (Box. 287-160tha) (W. 247) 2 Wintschee Clark Blewick Haryork. (Kist Clay) 3 H.P. Birnwanger, 200 Below, 18, 19, 18, 18 English China Clay 4 Jrhin W. Higman B. N.J. Pulving English China Clay 5 John W. Higman B. N.J. Suplish China Clay 7 Trolo Royard P. H. Albanta Ca. (N. 2 Clay) 8 R.T. Vandabith B., 50 Ex285t. Ny Shaumer Rub. Clay 9 C. K. Williams Oo, Easter, Fa. (Immacolate powdered clay) 10 Ghas A. Waginer, 221 Ninot St. (Pilla, Ta. (Soundaba) 11 Mirie Brick Tille Co., Pryear, Territ. (Clay hos) 12 Roselev & Hizoalachev Cheen B. N. J. ("G. N. Clay) 13 Chao M. Franz himto, (tip Back Bly Blocking No. (No. 2) 14 Joshua Boole, East Liespool, Ohio (No.) 15 S. Ci. Leon & Oron, Bannington, Dermont, (China Clay) 16 Miner-Edgan Co. 30 Chunda St. N. J., S.C. Rosedwal Clay 17 Rosestor Harriacher Co. 100 Williams H.N. ("S.C. ("Clay) 18 Harriacher Co. 100 Williams H.N. ("S.C. ("Clay) 19 The Smith Blo., N. J., OB. S. English Ohina Clay 19 The Smith Blo., N. J., OB. S. English Ohina Clay 19 The Smith Blo., N. J., OB. S. English Ohina Clay 19 The Smith Blo., N. J., OB. S. English Ohina Clay 19 The Smith Blo., N. J., OB. S. English Ohina Clay 19 The Smith Blo., N. J., OB. S. English Ohina Clay 19 The Smith Blo., N. J., OB. S. English Ohina Clay	D 457		
1 John Richarden to College 289-1 States (824) 2 Williams College Blains Haughon. (834 Clay) 4 J.P. Binewanger, 203 Edward Nizy. Pulmings English Claims. 5 John W. Higman B. Nizy. Pulmings English Claims. 6 Green Chemical Supply Co. Co. States (No. 2 Clay) 7 R. T. Vandabilt B., 50 E 42°51. Ny Shannes Pulm Clay. 9 C. K. Williams Co. Easten, Ta. (Immaculate powdered clay) 10 Char A, Wagner, 221 N. Front St. Hilla. Ta. (Soundfaha) 11 Divis Brick Tile Co., Frygar, Tenn. (Clay ho) 12 Roseller & Hasalacher Chem. C. N. J. ("O. N. Cley) 13 Char M. Franz himbo, City Back Bly bladdig low. (No. 2 glay) 14 Joshua Poole, East Kjerpool, Ohio. (No.) 15 S. Ci Lyone of Oron, Beanington, Dermont, (China Clay) 16 Miner-Edgan Co. 30 Chunck St. N. J., S.C. Foundam's Clay. 17 Rosestor's Hast Cacher Co. 100 Williams St. N. J. (Catta Lee Man CC) 18 Haumill Keillespie, 240 Front St. N. J., (Cotta Lee Man CC) 19 J. Tee Smith Stat., N. J., Co. St. English China Clay. 19 J. Tee Smith Stat., N. J., Co. S. English China Clay. 19 J. Tee Smith Stat., N. J., Co. S. English China Clay. 19 J. Tee Smith Stat., N. J., Co. S. English China Clay.	Claus - at a little too coance - possible to.		
2. Individual Clark Olderick Margach. (N34 Cay) M.P. Binewonger, 208 Edward, 18. Euglish Kadin. 4. John W. Higman B. Nig. Polumiya Euglish Claim Clay 5. John W. Higman B. Nig. Polumiya Euglish Claim Clay 7. T. Rode Maybard H.H. Albath G. (N°2 Clay) 7. T. Rode Maybard H.H. Albath G. (N°2 Clay) 7. C. K. Williams Bo. Easton, Ta. (Immacolate powdered clay) 10. Chack A. Waginer, 221 N. Kont St. Hills. Ta. (Swoodfaka) 11. Divis Brick Tile Co., Proyear, Tenri. (Clay hos) 12. Rode A. Wagner, 21 N. Kont St. Hills. Ta. (Clay hos) 13. Chack M. Franz beindo, Oily Book Bly bladdig Do. (No. Logic) 14. Joshua Poole, East Kierpool, Ohio. (N°1) 15. S. Ci Lyone of Oron, Bennington, Dermont, (China Clay) 16. Miner-Edgan G. 30 Claude St. N.Z. Sc. Poude and Clay 17. Noesthert Hast Tacher G. 100 Williams St. N., (Sc. Caa) 18. Haumilly Cirilegipe, 240 Front St. N.Z. (Cotta Lee Man CC) 19. Tee Smith St., N.Z. OB. S. English Ohina Clay 19. Tee Smith St., N.Z., OB. S. English Ohina Clay 19. Tee Smith St., N.Z., OB. S. English Ohina Clay 10. Chack The County of the County	I John Richardson Ho. (Box 2887-1Boston) (*247)	11928 per tou.	
2 John W. Higman B. N. J. English China Clay. 5 John W. Higman B. N. J. English China Clay. 6 Growith Chemical Stuppe G. G. 63.4. 7 Treate Maynard PH. II. Altanta Ba. (N°2 Clay). 8 R. T. Vendabil G. S. OSE 2°55 Ny Shannat Pub. clay. 9 G. K. Williams Bo. Saston, Pa. (Immaculate poudered clay). 10 Ghas A. Waginer, 221 Norms St. Flilla. Ba. (Swongloba). 11 Ilinic Brick Fittle Co., Frygar, Tenn. (Clay ho). 12 Roise Brick Fittle Co., Frygar, Tenn. (Clay ho). 13 Chae M. Franz Joine, Oily Book By Disable W. (So Zylad Ce). 14 Joshua Boole. East View pool. (No. (N°1). 15 S. C. Hopen of Orro, Bennington, Dermont, (China Clay). 16 Miner-Edgarlo, 30 Chunch St. N. S. C. Soundad Clay. 17 Rosestory Hast Tacher G. 100 Williams St. N. J. (Catta Lee Man Ce). 18 Haumilly Gillespie, 240 Front St. N. J. (Cotta Lee Man Ce). 19 Tice Smith St., N. J. Cot. S. English Ohina Clay.	2 Whiteher Clark Oldwels Newyork. (X34 Clay)	\$4000 per. ton.	
5 John W. Higman B. N.; English China Clay 6 Growin Chornied Supply Co. 95.4. 7 Troise Manginer PH. I. Albanta Ca. (1/2 Clay) 7 R. T. Vandabith Co., 50 E42°51. Ny Shanne Pub. Clay) 7 C. K. Williams Co., Easten, Ta. (Immaculate powdered clay) 10 Chae A. Waginer, 221 N. Font St., Albanta E. (Scandaba) 11 Nive Brick File Co., Frygar, Tenn. (Clay ho) 12 Roseller I translade Cue. Co. N. J. ("O. W. Clay) 13 Chae M. Franzhim Co., City Bath Bly Delaily Da. (No. Suplet Co.) 14 Joshua Poole, East Liverpool, Chio. (N") 15 S. Ci. Lyone o Core, Earnington, Dermont, (China Clay) 16 Miner-Edgar Co. 30 Chunch St. N. Z. S.C. Foundami Clay. 17 Roseller Harriacher Co. 100 Williams St. N. J. ("S.C. Caa) 18 Haumally Cillegia, 240 Front St. N. J. ("Catta Lee Mon CC.) 18 Haumally Cillegia, 240 Front St. N. J. ("Catta Lee Mon CC.) 18 Haumally Cillegia, 240 Front St. N. J. (Catta Lee Mon CC.)	4. P. Binswanger, 203 Bolozy, n.z. rules ingles lander		dry-
6 Groseil Chemical Distributed. (S.S. M. 2 Clay) 7 T. Foole Mayinard E.H. I. Albath & S. (N°2 Clay) 8 R. T. Naudabil & G. (S. Explish & Kanner Pub. clay) 9 C. K. Williams Bo. Easton, Pa. (Immacolate powdered clay) 10 Chat A. Wagner, 221 N. Kont St. fillah. Pa. (Swoodfaka) 11 Jinie Bri & With Ca. R. Prygar, Tenr. (Clay has) 12 Roselan & Hanshadau Cheen. B. N. 7, "B.W. clay) 13 Chac M. Fans himbo, City Book Bly bladdig De. (Woodfak Ce) 14 Joshua Poole. East Liverpool, Ohio. (N°1) 15 S. Ci Lyone & Ohro, Bennington, Dermont. (China Clay) 16 Miner Edgar & Solumed St. N. 7, S. C. Powdered Cay. 17 Roselan & Harriadow & Low Williams St. N. (Sc. Clay) 18 Haumull & City Circlespie. 240 Front St. N. 7, (Catta Lee Man Ce) 19 T. Lee Smith & R. N. 7, C. D. S. English & China Clay. 19 T. Lee Smith & R. N. 7, C. D. S. English & China Clay.	5 John W. Higman Co. 71.7. English clima clay.	1700 perton.	
7 R.T. Naudabith E., OG F2 St. My Naumer Tubu. Coay. 7 C. K. Williams Oo, Easton, P.a. (Immaculate powdered clay) 10 Ghae A. Wagner, 221 Manut St. fills. R. (Sucusfabla) 11 Ilvie Brick VTile Co., Forgear, Tenn. (Clayhor) 12 Roiselw V Haashadus Chen. C. N. 7. (CN Clay) 13 Chae M. Fanz heimlo, Gitz Book By Williadis (Du. (No Englad Ce)) 14 Joshua Poole, East Vierpool, Ohio. (No) 15 S. Gi Lyone Voro, Bennington, Verment, (China Clay) 16 Miner Edgardo. Schunds St. N. 7. S.C. Powdews Clay. 17 Roessfort Hast acher G. 100 Williams Y. W., (Sc. Clay) 18 Hammill Cileging, 240 Front St. N. 7. (Cotta Lee Man Clay) 19 T. Lee Smith 86, N. 7. CB. S. English Ohina Clay.	6 Groxail Chemical & Supple, Co. G.S.4.		
7 C. K. Williams Bo, Easter, Ta. (Immaculate powdered clay) O Ghat A. Wagner, 221 N. Krost St., Phila. Ta. (Scay hol) 12 Roselev & Harabachev Avenue. C. 12, 1"C. W. clay) 13 Chan M. Fanz himbo, Oith Boak Bly bladdy Der. (Boo Lydel CC) 14 Joshua Poole, East Liverpool, Ohio. (NI) 15 S. Ci. Lyoner Olore, Bennington, Dermont, (China Clay) 16 Minen-Edgarlo, 30 Chund St. N. Z. S. C. Foundard Clay. 17 Roserbort Maritacher G. 100 Williams H. N.; (SC. Clay) 18 Harwill Keilledgie, 240 Front St. N. Z. (Cata). 19 J. Lee Smith Hol., N. Z. O.B. S. English Ohina Clay. 19 J. Lee Smith Hol., N. Z. O.B. S. English Ohina Clay.	R.T. Vanderbilt Co., 50 E420 St. Ny (Shawner Pulv. clay.)	1500 Saylorskurg, Pa -	dry
10 Glack A. Waginer, 221 Manus St. fills. Br. (Groun feet) 11 Airie Brick VIIIe Co., Forgear, Tenn. (Clay hos) 12 Roselby + Haadbacku Chen. B. D.; ("G. W" clay) 13 Chac M. Franzhim Co., City Back Bly bladish lov. (100 English CC) 14 Joshua Poole, East Kierp pool, Ohio. (N") 15 S. City Lynn of Yorn, Dermington, Dermont, (China Clay) 16 Miner-Edgarlo, 30 Church St. N. Z., S. C. Poudual Clay. 17 Roserbord Harriacher Co. 100 Williams 7, N.; ("Clay) 18 Haumill & City Beiner, 240 Front St. N. Z. ("Catta Lee Mon CC) 19 T. Lee Smith & M., N. Z., OB. S. English Ohina Chay.	7 C. K. Williams Go., Easton, Ta. (Immaculate powdered clay)	1160 Langley, S.C.	
12 Roselar & Haralacher Cleen. C. 7. 7. ("G.W. "Clay) 13 Chack M. Franz Jointo, Stip Back Bly Blocking War. (100 Suglet CE) 14 Joshua Poole, East View pool, Ohio. (NI) 15 S. G. Haran & Brow, Bennington, Demont, (China Clay) 16 Miner Edgar Co. 30 Chund St. 71. 7. S.C. Poudewid Clay. 17 Roselar & Harriacher Co. 100 William St. 17. ("S.C. "Clay) 18 Harunilly Cirilegie. 240 Front St. 17.; (Catta Lee Moor CC) 19 T. Lee Smith Har. 17. CB. S. English Ohina Clay.	10 Chas A. Wagner, 221 N. Front St. Phila Pa. (Snowflake)	14400 purtou Puryear, Tenn.	
13. Chack M. Franz Leimbe, City Back Bly Black (10). (100 Confect. Col. 17 Joshua Poole, East Liverpool, Chio. (101) 15. S. Cil Lyone of Brow, Beanington, Dermont, (China Clay) 16. Miner-Edgan Co. 30 Chunch St. N. Z., S.C. Poundand Clay. 17. Roserborth Hast Tacher Co. 100 Williams St. N. J. (S.C. Clay) 18. Harmull M. Cillegine, 240 Front St. N. 74. (Colta Lee Mon CC) 19. The Smith Hole, N. 74. OB. S. English China Clay.	12 Rousev & Hassachen Chem. Co. N. 7, ("G. W" clay)	Panco penton.	dry.
17 Joses Waller Law Group Law (China Clay) 16 Miner Edgarlo, 30 Chund St. N.Z. S.C. Found with Clay 17 Rossilor Hast Tacher Co. 100 William St. N.Z. (S.C. Clay) 18 Haumill Her Rieger Law Front St. N.Z. (Catta Lee Mon CC) 19 Tee Smith Ho. N.Z. OB. S. English China Clay 4 Tee Smith Ho. N.Z. OB. S. English China Clay 4 Lee Mon CC)	13 Chas. M. Franz heim lo., Gity Bank Aldy Wheeling Was, (430 English CC)	17725 per long ton FOB. Caro New york.	
16 Miner Edgarla Schund St. N.Z. S.C. Poudous Clay. 17 Roessiers Harriacher G. 100 Williams H. W. Sc. Clay. 18 Haumill Gillespie. 240 Front St. N.Z. (Cotta Lee Moor CC) 19 J. Lee Smith Ch. N.Z. CB. S. English China Clay.	14 Joshua Poole, East Liverpool, Ohio. (Not)		Unctions
18 Hammillo Gillespie, 240 Front St, N.y. (Botto Lee Moir CC) 5500 "19 Jees Smith ole, N.Z. OB. S. English Ohina Clay.	16 Miner Edgar Co, sodundest, N.Z. S.C. Powdered Clay.	1400 per tou McIntyre, Ga.	
19 J. Lee Smith & G., 11, OB. S. English China Clay.	17 Roesslers Hasslacher Co. 100 William St. N.J. S.C. Clay	1350 " " " " " " " " " " " " " " " " " " "	
20 Samuel Newnes Go, Due. 1095. 254. Phills 45 clay 1722 Per ton dry	8 Hammilly Gillespie, 240 Front St, N. G. (Solles Leemost CC)		,
	20 Samuel Nevins Go., Que 1095. 205+ Phila, \$5 clay	1700 Perton	dry
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11-458
              Clays shout like what we use -
1 L. B. Carey , Rome Ga. (no 5 Pink China day.
                                                            1,00 purton Hepzibah, Ga.
2 Albion Kaolin Co., Hepzibah, Ga.
                                                            2400 per long ton F.O.B. Now york.
3 Joshua Poole , East Liverpool , Ohio. (Nº10)
                                                                 purton McIntyre, Ga.
4 Miner Edgarlo., 30 Church St, N.z. (G. W. Clay)
                                                                           Mt Holly Spgs. Pa.
5 Holly Clay Corpin, Real Estate Trust Bldg, Phila Washed clay
6 Stanley Doggett Inc.
7 Paper Makers Chemical Co, Easton, Pa. (XI Georgia)
                                                                     Mines in Georgia.
8 Moore & Mungar, New York. (Paramount American Crude)
                                                                      Mines Toland, Pa.
9 Philadelphia Clay Co. Phila, Pa. (Lump American China Clay)
10 Whittoker Glarho Dainels, NZ. (Clay 7037)
11 Frederick E. Bausch, 1105 Chemical Bldg. Stlain.
12 Roessler & Hanslacher Chen Co., W.Z. (Welay)
13 Philadelphia Clay Co. Phila Pa. ( Pulverized Amer. Cl.
                                                                             Toland Ta
14 Robert Girchrist 82 Beaver St, 713, Anglo Amer. Tale Corpu.
                                                                                                            Unctious
15 L.B. Carey, Rome, Ga (Nº 4 White China Clay
16 T. Poole Maynard, 226 Hurt Bildy, Atlanta Ga, 703 day,
                                                            2000 p
17 John W. Higman C. H.Z. (J. I.M. English China Clay)
18 Hammill & Gillespie, N.Y. XXX Ausported
19 Paper Makers Chemical G., Easton; Pa. (No70 Clay
20 John Richardson Go. Box 2887, Boston, (C.Z.B. Engli
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Class about like what we use and for Monarch Clay Mining Co. Bellevie Ky. Jourgans 2 Paper Makers Chemical Co., Easton, Pa, X2 Refi 3 Aluminium Flake Co., Akron, Ohio. 4 Chas. M. Frans heim C. Wheeling, W. Va. Interstate Clay Co. Sumter, S.C. 5 Savannah Kaodin Go., Gordon, Ga. (Washed white clay) 6 Parsons & Whitemore Ing, 299 Bolury, N.7. (no 1 Mc Name China Clay) 7 Miner-Edgar Go., 52 Warren St., N.J. (E.W.N. Powdered Clay) 8 John W. Higman G. , 27 Bdway, N. y, (no 45 Homestic Clina Clay) 9 T. Poole Maynard, 226 Hurt Bidg, Atilante, Ga. (Clay 100) 10 Aobert Gilchnot 16. 82 Beaver St. 11.7. Anglothmer. Tale Grpn. 11 National Sales Co., Cincinnati, Ohio. \$ 290 Clay. 12 Parsons & Whitemore Inc. 299 Bolway 13, (XI Pulveriged Clay) 13 Stresen-Revier + Hamock Inc. 122 5. Wild. Ave. Chicago : (X126 Clay) 14 H.S. Grossman, 39 Gortlandt, St. NJ. (Washed no. 45) (clina clay) 15 A. Kleipstein Go., n.y. 16 H. P. Binswanger, 203 Bdway, U.Z. (Polvenge Homestic Kaolin) 17 Paper Makers Chemical Co., Easton, Pa. (Regined No1) 18 Hammilly Gillespie 240-2 Front St 714 (7-1 Imported 19 Whittaker, Glarky Haniels, Wy. (clay 841) 20 John W. Higman B, 27 Bdway, 12, ("Superb" Crude Homestic)

\$5.50 per tou Paris, Term. Laughy S.C. in po \$1000 perton (2000lb) Congares 9.C. 1000 per ton Gordon, Ga. \$1000 perton Congaree S. C. 2100 per ton 806 Orange 11. J. ace D 458-14 1150 perton 8.0. b. Stedman, S.C. bage 18 & az. Bath S.C. 925 perton Langley S.C. 1025 8.0. b. Sumit. S.C.

paperbags 200 Freight est. 600

newyork

Langley S.C.

1200 per tou

2500

Fine crude clays-colloid particles not week	worked out	
Fine Crude clays-corrol & particles	#000 Tlan Resuch Gra	unctions
John Santo Sons Gompang, East Liverpeal, Ohio. (#1. Pulv. Grangis	Leg Dianar, dar	dry
2 T. Poole Maynard, 226 Hurt Bidg, Atlanta Ga (No 1 Clay)	the second control of	unctions
3 J. P. Prall, Woodbridge, N.J. (XI Fine clay.)	211 1 1 1 1 1	
4 Miner-Edgar Co., NZ, 30 Church St. (L.C. Clay) washed upon	AKhahumpka, Fla. T	unctions
75 Lake County Clay Co., Metucher, N. J. (Lake County Clay)	Floor Edgar, Fla.	unctions
6 H. S. Gross man, 39 Cort landt St. My. Minual Haduets Co Ceorgia Lindy	\$800 Orglethorp., Ga. (See (18) day book) unctions
> 7 Edgar Plastic Kaolin Co., Metochen, N.J. (Edgar Clay)	1010 Edgar, Fla.	unctions
8 Papermakers Chemical Co. Easten, Pa. (Lump Florida)	\$1000 OKahumpka Flat	
9 Parsons & Whitemore, 299 Bolway 7.3. ("MNW" clims clay)	Bath, S.C.	unctions
10 Golonial Clay Co., Paducah Ky	#300 Hickory Ky.	
11 Jag A. + Wor E. Hill , Abbeville , S.C. (M.C.) (Bu lungs in page bag)		unctions
12 Hand Clay Co., Ganton, N.C. ("Spreapine Hand clay")	1500 Woodrow, N.C. (infilter press	
13 C. B. & S.C. Co. Hazel, Ky (Neg B.C)		unctions
14 Moon Glay & Kaolin Go., Trenton N.J. (Ne 2 Sagger)	400 Trenton, N.J.	unctions
15 Moon Glay & Kaolin Go., Trenton N.J. (Nº 1 Sagger)	1450 Trenton N.J.	unctions,
16 Gonsolidated Clay & 10w State St., Trenton.	\$395 Fos Trenton.	unetions.
17 Victor G. Bloede G. Barto, Wid, Red clay	2 50 Pawtucket, Md.	unetions,
18 Estate W. H. Cutter, Woodbridge, M.J. (XI Retort Clay)	\$750 perton woodbridge U.T.	metions.
To Later William A - A + Dula NT (Fine hour)	1600 Perth Amboy, N.J.	unctions
19 L.A. Me Hose Inc., Perth Ambay, N.T. (Fine blue)		uctions e grit.
20 Gladding, Me Bean & Co., San Francisco, Cat. (Ground Fire Clay)		/
The second second second second second second plane as design processed and a process of the second	No. of the last of	
The second secon	Table 1 and	

Fine crude clays (NIO B.C.) C.B. & S.C. Go., Hazel, Ky. z W. H. Gutter, Woodbridge, N.J. (Nº 1 Fine Clay) 3 J. P. Prail, Woodbridge, N. J. (Heep buff clay) 4 Dixie Brick o Tile G., Puryear, Tenn. (Clay X2) 5 Armstrong Gork Go., Beaver Falls, Pa. 6 Padweah Clay Co., Padweah, Ky. (Lofton, No) 7 Monarch Glay Mining Go., Beilevue, Ky. (ternigan Sagger 8 The Grossley Mining Go., Torns River NJ. (X3 clay) 9 Jas. P. Prail, wood bridge, N.J. (XI Sagger Clay 10 L.A. McHose Inc., Perth Amboy, NT. (X7) (Imported Grucible) 11 Kern Gommercial Go., N.y. 12 Enterprise White Clay Co. Real Estat Trust Bldg, Phila (May Sield Noz Ky Balld 13 May field Clay G., May field Ky (Noz Ball clay) 14 Monarch Clay Mining Co., Belleve, Ky. (Jernigan Gray Ball) 15 Moon Clay & Kaolin Co. Trenton, N.J. (7102 Sage 16 Mayfield ClayCo., Mayfield, Ky. (X) Clay 17 Monarch Clay Mining Co, Bellevue, Ky, Jeringan Cappa) (XX9 Ball 18 Paducah Clay Co., Paducat Ky, (Howard Not clay) 19 Paducah Clay a., Paducal Ky (W. S. Clay) 20 Foster, Verner & Rice , Two caloosa , Alabama,

colloid particles not washed out, mostly colloid. metier 800 purton - woodbridge, n.J. Puryear, Tenn. perton Beaver Falls Pa. muction 300 pw. ton . paducah 14. 300 purton Bellione Ky. metions metion dry 8475 perton Perth Amboy unctions about 2200 perton - N.y. dry \$550 per tou at mines. (Marfield ty (May field My) unetious Paris , Tenn. 550 perton, unctions. Trenton, N.J. nuctions Mayfield My 300 per tou motions metions " F.O. b. Benton Ky.

11-462 Fine Godo Clays.

	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	a - S	
	1 F.T. Garmack, Burnsville, Miss,	4 010 1	
	2 Product Sales Go., 32 S Calvert St. Balto. Med (Berkeley Clay)	800 perton Gold Springs, Va.	unctions
	3 H.S. Crossman, 39 Gortlandt St., N.y. (Crude Alatana C.C.)	750 . Allen, Ala.	
	4 Monarch Clay Mining Go., Bellevve, Ky. (Cluse gray Ball)	1550 perston F.O.B. Paris Tenn. looks like	Unctions but deen of auch V. Hard Unctions
	5 WM Gauley, New Castle, Colo.	1200 pur ton New Castle, Colo.	unctious.
	6 Jas. P. Prail, Woodbridge, N.J. (Irony Fine)		dry
	7 Grimora Manganese Gorph, Crimon , Va. (Clay) ouf.	no quotations.	dry
	8 Grimora Manganese Gorph, Grimora, Va. (Cay) Red.		soft fine .
K	9 J.A. Jeffe, Rockland, Mich.	(A 550 Parton Sob Kochland Wich.	Unetious
	10 Moon Clay & Kaolin Go., Trenton N.J. (Sauly March) Red	(325 per ton) Treuton.	ALCON TO THE PARTY OF THE PARTY
	11 H.N. Gooper, Hollow Hock (Tenn.)	(#150 perston)	dry.
	12 Empire Clay Mining Go. 53 Providence St. Albany, Ny. Albany Sopla	\$450 perton 8.05. Albany.	Unctions
	13 Jackson Bros, Glay Mining Co., Paris, Term, Momenta)	- W	dry
	14 Enterprise White Clay Co. Mile, (\$30 grade plastic Clay)	350 per ton 9.06. mines in M.J.	dry
	15 J. P. Prail, Woodbridge, NJ. (Tough blue)	1501	Unctious
	16 Kern Commercial Co. New york, (Imported Crucible Clay)	about 2 200 per ton newyork.	Unctions
-	17 May sierd clay Co., May sierd, Ky. (X3 Ball clay)	8500 per ton Marfield My	Unetious
	18 Monarch Clay Mining Co., Bellevve, Ky (Grabble Black)	\$550 Paris Tenn.	Unctious.
	19 T.F. Morton Tranton, N.J. (Rockingham Clay)	1426 perton Trenton	
	20 Wa Hinwiddie, Metuchen, N.J. BLACK	3500 per ton - 9.0.6 meterdan N.J.	Unetious,
	20. 11. 21110	the second secon	
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II-463 Crude Gritty Clays, White to gray

1 J.A. + WM 2. Hill , Abbe ville S.C. (Loose in box with hac) 2 Paper Makers Chemical Co. Easton, Pa. (X72 Clay Suporto) 3 Jas A. + WEE. Hill, Abbenille, S.C. (XA) 4 A.B. Lehman, Fayetteville, Pa 5 A. A. Mackay , 130 Pearl St., 717. 6 Katen bacho Bulloch 100 Wast. NZ. (X 10 White clay) 7 Golding Sous Co., Butler, Ga (Georgia Clay) 8 Pann Tile Works, Aspers, Pa. 9 Victor G. Blede Co. Federic Road Sta. Balto, Wed. White clay 10 Atlas Mineral Products Go., Lincoln, N.J. 11 Foote Mineral Go. Phila. (Finely powdered Ary Branch Clay) 12 Jas. S. Maffitt, Perryville, Md (washed by land) 13 Amas B. Lahman, Fayatteville, Pa. 14 Nail Clay Resining Go. Shamock Station Pa (320W clay) 15 Western Kaolin Go, 4101 Olive St., Sthouis, Mo. 16 Dill-Grossett Inc. (Powd clima Clay) 17 Atlas Mineral Protodo Co, Lincoln, NJ, (R clay) 18 The Barr Go, Naryon Pa. 19 Lester Clay Co., Jacksonville, Fla. Fuller's Earth. 20 Ostrander Fire Brick Co., Troy, NY.

like fullers earthe \$1550 perton newyork. like fulledtearthe Mine not developed. perton, Georgia. \$1700 mined at Butter Ga, Aspers Pa. like fulles Entle Pawticket, Md. \$300 Merztown, Pa. \$450 like fellent Enth. mine not developed nine not operating hoquetation 1400 per ton F.O.B. Shamock . Pa. Vive per ton F.O.T. G. En Allen, Mo.

300 per ton Narvou, Pa.

Fizes perton Attapolgus, Qa.

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like fullers cartle.

1 Monarch Clay Mining Co. Belline Ky, (Bowden wat) 2 Ostrander Fire Brick Go., Troy, N.4. 3 Ostrander Fire Brick Co., Troy , N. 4. ("A" 4 L.A. McHass Inc., Perth Amboy, N.J. (Star Blue) 5- W. H. Cutter Estate, Woodbridge, N.J. 7 (XI Retart) 7 Crossley Mining Co., Grossley Station, Toms Priver, NJ. X2 clay 8 J.P. Prall, Woodbridge, NJ. (BUFF day) 9 J.F. Morton, Trenton, N.J. 10 L. A. McHose Inc. , Perth Ambay , N.J. ("C" Retort) 11 Geo. S. Mepham Vo., East Stlown, Ill. (X7 Gray Clay) 12 National Sales Go., Gincinnati, Ohio. (X 301 Clay) 13 James P. Prail, Woodbridge, N.J. (Frong Sandy) 14 Jas. W. Gollins, 402 Frick Bldg, Putsburgh Pa. 15 L.B. Garey, Rome, Ga. 16 L. B. Carey, Rome, Ga. (Clay X3)

. 17 C. K. Williams Flo. Easton, Pa, (X1045 Agment), Red

20 L. A. Mc Hase Inc., Perth Amboy, N.J. (Black Retort Clay

18 L.A. McHase Inc., Teith Ambey, N.T. ×19 Gherokee Ochre Go., Castersbille, Ga.

Crude gritty clays.

Boo parton FO.B. Pare Tam.

1. E parton Sob Bath Amelyn.

1. E parton Sob Bath Amelyn.

1. So parton Woodbridge, M.J.

1. So parton Woodbridge, M.J.

1. So parton Trins River, N.J.

1. So parton Just Arubay, N.J.

1. So parton Just Arubay, N.J.

1. So parton Just Arubay, N.J.

1. East St. Janis St.

1. Rost " Narrow Ba.

1. Martinia.

Course grit - like stone \$3200 per ton decivered. #370 per ton Section Brushy, H.J.

D465-1000H. Schule clay, what we are win by flatation in three parts -1000 total -94.5-5.5- Colloidal 100.0% warled out and lost e test an Lion Clay -10.8 colloidal

2466 Rosin 5000 g (11 lb) rosin. 2009 Synthetic. milt from, when temperature is about 400° F add products and little from the stand to 500° and hold for 15 mm.

Blowing Castor Oil, 7/2 lkg Castor oil -12 the lastro out of the stand only orached the exhaust, 30h 30 high temp.
31h 10 at 220°F
61h 40 total time blowing
bry tough atticky mass.

Clay from 12, T. Vanderbilt 6, K. Brengia, 260 Arisel 241 Blue Bilge 252 Total By R. Lee

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l rosin collon chaen 5 chaen 15 healer 45 12 10 grind , trous

rosin Collow Heigel-rosin

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12 Och Prosin Collon

5 Cut - L

10 5 Cut - Clay

15 Cut - L

20 5 2 Cut - L

30 + Cut - 5 Clay

35 - Cut - F

160 Cut - F

160 Sul - H

150 Sul - H

good	Vgood	NV good
239 Zine white	246-2 blane gire	223 296-3 - blace Sixe
The second secon	248 " "	
250 blane Sire & gashlach	256 m "	
250 blane Sixe gasblach 259 blane Sixe 274 Lithange		271 Red Lead.
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Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments -- Disc Plating Books

These sixteen notebooks, which cover the years 1912-1918 and 1920, relate to the platting processes used in producing disc records. Most of the entries are by William W. Dinwiddie. Other employees who are identified as working on similar experiments include Charles Beaumoni, A. Boetsch, Leroy E. Briggs, Peter C. Christensen, Peter Dempsey, William A. Hayes, John McMullen, F. Meschmeyer, Joseph Miller, Frederick P. Ott, Elroy Pearsall, and Albert F. Wurth.

The experiments in these books were aimed at improving the plating precises involved in making masters and submasters for disc records and at resolving specific problems in current practices. Edison's in this work is shown by references to plating experiments performed by him, as well as by references in several books, particularly N-13-04-04.2, to statements made by *Mr. E.* The gap in plating work from 1916 to 1920 in this subgroup, as well as in the Notebooks by Edison series, is most likely due to Edison's decision to concentrate his efforts and his staff on work for the Naval Consulting Board and inventions for the U.S. Navy.

Although the notebooks in this subgroup are loosely related to each other, they deal with a variety of experiments. For example, there is a set of three books consisting of daily records of masters, their plating, and the results of the plating, included are entries with some or all of the following information about the experiment: an identifying number for the record, the title of the recording artist, the type and condition of the record, room and bath temperatures, times and amps for the beth, and a report on results. Some books contain lists of various experimental plating solutions and their ingredients. Other books include plating "schedules" and formulas for various solutions used in the plating process. There are also books describing experiments with various ingredients, such as graphile, and different parts, such as anodes, that were used in the plating process.

Two notebooks have been selected because they include secret formulas and processes used in the plating of Edison disc records and because of their strong indication of Edison's involvement.

I-Number	<u>Labels and Inscriptions on Front Cover</u> [additional information supplied by the editors appears in brackets]
Selected Books	3 (December
3-09-27	"Copper Disting Phonograph Records
14-05-28	"Silver Plating W.W. Dinwiddie May 1914"
Books Not Sele	"Copper Plating. Gold Plated. White Masters. July 26,
12-07-26.2	1913. Sept 4, 1913. W. W. Dinwiddle. No 1 to 200 , 200
	Records" "Dinwiddie Plating Notes April, 1913", "Disc Record"
13-04-00.2	"April 4, 1913. Dinwiddie Silver Plating Etc. Disc Records.
13-04-04.2	
	S.O. 2913 " "2 April 22, 1913. Dinwiddie Plating Disc Reports 500
13-04-22.1	204 C O 2013 June 4" (continuation of N-13-04-04-2)
13-06-24	
13-09-04	
10 00 0 1	Sent 4 1913. October 11, 1913. W. W. Dillwiddie, 3100
13-10-11	
13-10-11	"Copper Plating Gold Plated Masters 401 to W. W. Dinwiddie"; "Disc Records" [continuation of N-13-
	09-04] New 25 1013" "Disc
13-11-25	09-04] "W.W. Dinwiddie. Grafiting Machine. Nov. 25, 1913"; "Disc
14-01-19.1	"Copper Plating Wax Masters for Disc Phonograph L. E.
14011011	Draingel Ion 10 14 " "UISC RECOIDS
14-04-03.2	"Crafite Eyneriments": "DISC Records
15-09-21	"Copper Plating General Baths"
16-11-28	"Plating Expts. November-1916 140. 555
10-11-20	Dipwiddie" (continuation of N-13-06-24)
20-05-01	
20-05-23	"W. W. Dinwiddle"; "Disc Records W. W. Dinwiddle"; "Disc "Nickel Plating Disc Records W. W. Dinwiddle"; "Disc
20-03-23	Records"
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Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments -- Disc Plating Books Notebook, N-13-09-27

This notebook was used by William W. Dinwiddle during September 1913-August 1914. One additional notation was probably made in February 1915. The book begins with the inscription, "Let no one see this book without very definite orders from Mr. Edison." The entries consist primarily of a series of formulas, along with instructions describing current practices for plating the masters and submasters used in making Edison disc records. These were probably the culmination of numerous plating experiments documented in earlier books in this subgroup. Additional experimentation produced modifications in formulas and practices. For example, the use of submasters was discontinued shortly after 1913. Some of the formulas have been crossed out and changed, with an indication of the date on which the practice changed.

Among the practices described in this notebook is the method of preparing "dopes" (caminol and copper ink) for use in plating the wax masters, along with an indication of the object of using each dope. Also included is a description of the method of purifying the graphite used to make a conducting surface on the wax. In addition, there is a description of the formula method of molding the wax masters, as well as an analysis of the defects in disc molds. There are indications that H. Grimes worked with Dinwiddie osmoe of these experiments. Several notes and letters to and from Dinwiddie dating from 1917-1920 are inserted into the book. The front cover is labeled "Copper Plating Phonograph Records." The book contains 28 numbered pages; some pages are blank.

W.W. Dinwiddie 9/27/13

Let No One see This book without very desinite orders from Mr. Edison w.w.D.

\$ 5700 Aome Co.; MFG. STATIONERS, 96 JOHN ST.

19 PLATT ST.

NEW YORK.

Hope for regular baths for heavy plating.

Gaminol.

500 g. Caramel dissolved hot in regular plating solution by Strength make up to 2500 cc when cold by adding water. Each see Carrinol contains Ig. Caremal.

Garamel.

Gane sugar heated stowly until 210°C and Kept at this temperature until it tooses 10% of its weight.

For covering boths 1875 cc to 160 libres solution
See pages
For Wurth cylinder boths 500cc to 22 gallons.

for Regular Baths 5000 ce to 300 gallons, add more when work shows ergstals.

Por 80 Baths in Continual use 1250 CC Caminol added per week keeps them in Condition

See schedule for covering Page7-9 with copper Ink solution

Hope Por Govering Baths. Copper Ink.

20 q. XGZ dissolved in 2500 cc regular solution.

2500 cc Copper Ink to 40 gallons solution . seé pageiz

* 62 = Azurino = Erioglaveine. Made by Heller & Merz, 505 Hudson Street Ny. 1076s bought 9/23/13 was batch Ne73.

Solution requires to be used for a week or ten days to acquire the desired properties. at first, except at very low current density, the surface is covered with brown mottes in a beautiful spiral form Copper is too hand and is brittle, but has , even they, its covering power six times - that of ordinary copper, & no holes When solution is in perfect condition is amp will not show more than a trace here and there of this prown mottling on the extreme edge or corner of the Record submatter becord little dashes of brown like this the The need of more dope is indicated by

more dopa may be added 10000 per hour until trace of mottles appears on edge.

the records Taking a Tonger time to cover.

See Page 4 for later practice Chemical Curing CopperInk Toped Sazotion. To each bath of new solution (4 gailons) (15/2 litres exact) add 300 cc comper ink (page 3) then add 80 cc ("curing Hope") Hydrogen Ferexide with other boths Test by plating a dis earded Sypmaster, and striping Splating should be hard requiar schedule, and curlup, should & free from pin holes . Too much Corfig Dope will make appersost, whites wants and Buckles on Master Movids Solution For Master Room should be taken from submaster room, and hew solution added in submasterroom, copper becomes too saft add not faster than 100 cc per hour, and not morethan 200 de per For warts on Masters. See schedule for covering - Pages7 - 9 W.W. Diwiddia July 4-14:

Low Density Start Schedule for covering submasters in "Copper Ink" doped worth in Virgolina. Start 1 amp . + have jets on, circulation on, path 16 ± 2° F, surface of Cou 1/2 From edge 2 amp, bath well skimmed with air Cou. 1" From edge 3 Amp . and overglow. Gov. 2" " 4 amp. Music Govered 5 amp. To Label 2" diameter remaining 7 amp. I" diameter remaining 8 amp. 10 amp. + Put on cellulaid cover. 12 amp, - The main object for this final boost is to insure that attendent notices bath soon after cover is put on it is then likely to run undisturbed for zhours without trouble. Plate 2 hours and Transfer to general baths. Wash thoroly and transfer as quickly as possible. Keep very wet W. W. Dinwiddie July 4-14 When submasters are transferred to general baths they show a peculiar pink or old rose

color this is due to burning at the tips of millions of very minute hair like warts.

10.10. D. Aug 11-14

Schedule for Govering White Masters in Gopp ar Ink Alopad Solution.

1. Put Rubber plug in center.

2. Blow off with compress air.

3. See that both is perseally skinned, air and eirwichen on. Temper dime 16 f + I F. Kenten bothwar 12 17 4. Put in both resetroning over away from you while going degree, in solution and until boil is an air and constant on the second of the will make habits, of start womp.

14 - 2 " 3" 2" 2" "

24 - 3" 3" 4" "

24 - 3" 3" 4" "

24 - 3" 3" 4" "

24 - 3" 3" 4" "

24 - 3" 3" 4" "

24 - 3" 3" 4" "

24 - 3" 3" 4" "

24 - 3" 3" 4" "

24 - 4" or music covered, unless very narrow, 5 amp, 2", diamater remaining 6 amp

Then boost overy 4 er 5 minutes 1 amp until

W.W. Hinwiddie July 4-14

ATT covered

to regular baths,

Object of using Gaminel.

Prevents large ergstals.
Makes line grain smooth molds-easy to turn up. Object of using Copper Ink Prevents pin holes ABSOLUTELY wis inch thick 2 Makes Very Hard copper - Without loss 05 Tensile strength - 84,000 lbs per 3g. inch (max.) 3 Graphited records cover in 1/5 08 the Time required under same conditions in plain solution.

Hardrubber plating bath for 10" records holds 155 litres filled to within 35 man of top, with anode, filter, spider and record in place.

· Master Room_ 18 baths 279 litres + pipes etc = 300 litres

Submaster Room 24 baths 372 litres + pipes etc = 400 litres

Stone crocks shem diameter 62 cm deep. contains 2500 ce per em of height or 5 lifres per ace of depth of solution,

One litre Solution Contains blue Capty 200 g. Cu SO4-Copper Sulsate 25 CC H2 SO4 - Sulsuric Acid Specific Gravity 1.815

6.60.D. Aug 11-14 To test solution for Copper and Acid seepage13-14

Solution to Test for Copper-

c Water.

4 CC Water.

Measure 4.5 ce Plating Solution
Add 10.0 ce water

Had 10.0 CC Water 947, made from Add 8.0 CC Ammonia (1991) particular put, 20 CC 08 above KEN solution will clear

anch ce more than 20 required means soce water must be added to each

Titre of solution.

Each Ce under 20 required to clear means each litre of solution requires 109 Cu 504.

When New KCN solution is made up test it on standard plating solution page 12who. August

Solution To Test for Acid. KOH 1-80. 3 parts 33% HOH 17 parts water 10 ce - plating solution to be tested Is plating solution contains right amount of beid 25 ce MOH solution will make of acted 25 to 140% of the man of the permanently mily,

For each ce under 25 required add 1 ce H250, per litre of solution

For each ce oper 25 required add 40ce water, per litre of solution When New 110H Solution is made up test it on standard plating solution pages.

Constic Soda pure Aluminum Metal 1800 & 35 lbs. Recrystalized Dal Soda 224 + 30 gallous water. boil together with all aluminum discolved they filter. (Melt 1000 lbs Stearie Acid - heat to 3300 - Add slowly solution (1) then raise temperature to 420° and "foam off" temperature to 450° and hold point should be 270°F. If too high one percent of Stearie Acid Filter, and centrique

Analysis of Hefeets in Disc Moulds.

15) Wa

Smoothness of cut varies with softener used Hardness varies with softenery Congeling point. Grain - Fine - nearly amorphous with proper chilling Egg Shell surface - blank not chilled. Traces with chilled blank used green and not plated immediately, also FRED Attacked by solution - Congeling point too high bad Stearic Acid crystaline Vaseline Streaks or patches of egg shell surface - solid chip of wax falling in mould. Center or outside of blank with louder surface-(1824) Hisc warped after removing from mound From cooling too fast on one side . Chips - Loose chips are all removed by cleaning machine. Chips welded on due to sticky wax, or to pressure or being blown against the surface. Blinds - Hirt or Fibre in wax. Holes - Air or dirt in wax. Machanical desects of recording. Mechanical injuries - Singer marks. Attached by air - O Ric acid in excus (P.25)

Analysis of defects in Hise Moulds (Continued) Mechanical injuries.

Gleaning-Graphitingete -

Moisture spots. Airt.

Poor conducting Graphite.

Pratiminary Plating

Oily dust Ploating on bath - bath not well skimmed and speck of dust adheres to the

record - on account of its being oily it will not wet so it holds a minute bubble

of air. Holes look like bubbles. Particles of loose graphite not blown off or

washed off by jets . Moisture spots, oil spots, Fingermanks.

Buckles - due to too strong dope in bath. Sost copper - doe to too Title dope in bath .

indicated by slow plating.

Mechanical injuries.

Analysis of defects in Hise Moulds (Continued)

Outside baths- | Yeep temperature constant or solution will get under and attack sursace of mound.

Polishing - Not cleaning thereby Mechanical Injuries

Turning etc. | Mechanical Injuries. | Buckles

Mounting in Buckles due to dirt behind Steel Holders Mechanical Injuries

Gilluloid prints - Gelluloid defects defeits in dipping.
Scratches filled with Graphite.
The peats - aqueaks.
Not full prints directin temperature or pressure, Schedule not followed.
Medanical Adjunces - to made or prints.
Hist on remade or alluloid
Frigan meacher (728)
Gel. 194032 Labo.

-



Apalysis of defeats in Aliac Movids (Gontinuch)
Repairing: (Incomplète or imperfect repaire.
Allemateur injurier - repair toil etc.,
Gut by reproducer.
Finger marks. (98)

Graphiting Celluloid Prints . Too m

ts. Too much graphite.
moisture or oil spots.
finger marks, P28
mechanical injuries

Plating loose graphite not blown off.

(1) coase graphine not thorough or algae not filter fromtate

Mirt in solution look like algae (class all pipes of silver)

Mirt in sortace of solution - Not properly stimmed when

record is put in.

Working moulds. Turning Mounting ste- Mechanical injuries - Buckles - With Holder under mould.

is an east governing these and consider

Section For all its

3.56

Analysis of defects in Hisc Moulds (Continued) Gommercial Printing Mechanical injuries -Avet-sound or dist-particle of varieth between moved and blank Pine scratches.

Congeling Point of Wax.

Take about 200 cc Mallad wax in annall dipper. Shir continually with thermometer. Holdin good light - not in a draught.
Thad thermometer when a very delicate soum forms at the surface - looks like very delicate spider lines or very delicate film windling on the surface.

Should be 270° F (Taget) (Taget) Road thermometer classify when near right. See that there is no break in mercury of thememater 18 reading is high.

360° F is standard temperature for powing the wax in moulds.

Wax Oasting Machine.

Mould - See Blue Print insert at back of this book. Back of machine is raised about I" ligher than

Pront to let air out.



- Steam in top and bottom plate and ring wax
 - is poured. Trust be lot (24 I) (also ace Page 21) Top plate moved down against wax.
- water at 95° run thru jackets in place of strang sminutes (Pollow up contraction of wax with press)
 - 4 Steam off ringi
- 5 minutes (Pollow up contraction of wax with press) 5 Lift top platen when bottom plate will let go.
 - 6 Return press again to contact.
 - ? Kun steam in ring until it is free.
 - 8. List top plate. Is it does not let go, singer nail will start it.

Wax Gasting Machine.

Remove Ring

List off wax disc.

Cool between Stat plates, \$60rd, Suclars

Gauses of Defects ... wax casting

cracks and pull outs,

too much pressure between operations 4 and 5

Water too cold Cracks. or left in mould too long. Never have water above 95° F as wax will be too soft. also ree (K)

It time between operations 3 44 is too long top

of mould may let go first from wax. I If time between operations 3 + 4 is too short-blank may be concave on both sides or porus in center.

E Istime between operations 345 is too short blank will be too soft and surface may be cracked

in handling

K - Valve in circulation pipe three the lower steam plate is to reduce the flow thru this pipe and equalize the effect of the small flexible tubes to the top Inoveable plate so that the two plates cool and heat up at the same rate, Handle should be removed when this valve is once adjusted. 4 - Never obstruct the exhaust side

of the steam jackets because They are not designed to stand presoure. F. Water-circulation obstructed or water too warm. makes same defect as E Also Wax not properly chilled and consequent Egg Shell surface (Page 16)

Wax Gasting Continued)

Press moved down irregularly aster contact with wax.

wax on back edge of top + late-not cleaned properly. Prevents air grown being forced

lines on bottom of disc. mould not hot at start.

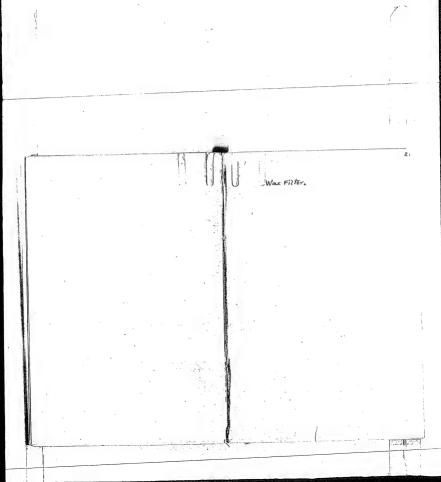
wax cooled too Past on one side by water jacket. unless caused by cooling too fast on

one side after removing from mould,

"Stanic Acid" is about 1/2 Paluitie Acid, It is double presed but to remove the Stice acid which about mot light excess of 3%-more thin aim and will cause want to be attacked by aim, and probably make it more cease, attacked by platein solutions according to mr. Aflamonth.

Vareline or Petrolatum which is empetaline and breaks short accused the wax to be attacked by the adultion runch more than the sticky oil, kind.

Wax is attacked by colution less when Studend oil Company FFF Valor oil is substituted for baseline them any other of about 80 softening media tied, when wax is attacked by solution the month bother rad when attent from wax. When it is not attacked the copper is left corned with graphite and when cleaned leaver beautiful policies surpar.



Graphite.

Hiron 097 Graphite I part. Courte Sada 2 parts or 2000a.

Meeted rad let for two bours.

(Pared rad let into water)

Noach ant Thicat of Toda. Can be washed ant
more third by adding toda to 2°03° water
as alread in metable except in presence
of Akhali. (math)

After thoro wording boil in Mydrochloric

Neid to remore from 22 through

Mit there woulding and drying boil on how
to strong Athric Dulpine Neid organic posts.

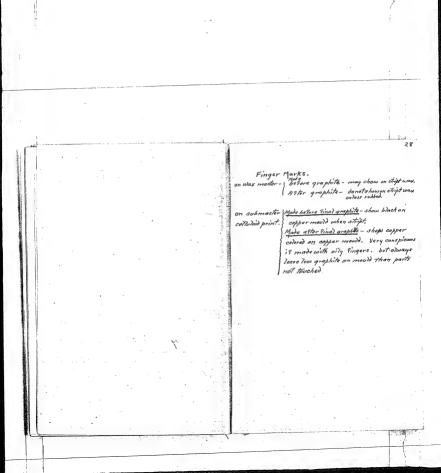
to ophit flanes and werease conductivity.

After the parts acid to one part graphic.

Legislad.

Dien 0485 Graphite is about as good as 077.

T.P. Kelley Foundry Rupply la, 549W22 St, N.J. 10 56 Sinohe graphite 8 & los has best and this is day fine but does not otich to collular the Diran 097 as heated by are. When trested by above process it cakes.



(ITEM(S) FOUND IN BOOK)

Mr Danivi ddie dates in which Camerol Hope has been added to the on plating solution. The last date you have is Dec 34-13. 1250 C. C. in Force Plating Room a Crock 3-4. After Plating Room will be brigger as Crock 1-2 The how Tables will be known as 5-4 and 7-8 Gocks 1-2 | Crocks 3-4 | Crocks 7-1250 C.C. Dec. 29-13 1050 C.C. Jan 2-14 1250 " " Jan 2-14 1250 11 11 19 - 11 900 11 11 -19-1 650 · " " 23 - · 5000 C. C Jan 30 - 14 1250 ... " 24-" 11 30-1 800 · " Feb 2-14 800 " " 5-11 2500 C.C. Tele 5-14 1250 · " Tel 5-14 eno C.C. "9 " 12-14 800 " " 12-4 700 " " 12-11 14-11 8000.6 116-700-4

Mr. John V. Miller Edison Chemical Works. Silver lakes

April 17th, 1917.

Re - Raw Material for Disc Masters:-

Ist.

Copy of letter to Purchasing Dept. June 20-1916 attached shows what

The practical test referred to was to make a small sample of Wax as follows:-

4.64 grammes Coustic Soda I.80 Aluminum 17 Sal Soda 101.60 II5. CC Water

Boil until all aluminum is dissolved and dilute to 300 CC. This is enough for 9 test batches of wax as follows:-50.5 g. Stearic acid from each sample.

33 I/3 cc of above solution. put solution into the melted stearic acid slowly temp. 330 F. raise temp to 420 F.until forming stops ; add 3.788 grammes of FFF valve oil; raise temperature to 450 F for two or three minutes stirring thoroughly with thermometer. Hould into a 22" diameter disc.

In testing a new sample a check test should be made using some stearic ... acid which we are using now, or know about, so that we may not be thrown off by some variation in the other ingredients.

The discs are then cut flat on one edge and part of one face sh to expose a cut surface. They are then placed in plating solution half emersed for 24 hours to see if the wax is attacked by the solution. I have usually drilled a hole in center of each and strung them on a wire to prevent their falling over in the solution.

Oleic Acid causes the wax to be attacked by air; Mr. Aylesworth considered 3% the danger line. We have never had anything like 3% Oleic in the tripple pressed stearic

acid, and have never had any trouble from it.

FFF Valve Oil made by Standard Oil Company ; this is tested by casting small discs same as we test the stearic acid, but we start with hard wax and take 50 g. of hard wax (wax made without oil, but complete otherwise) and add 32 grammes of each sample of oil. The best is the one least attacked by the

solution - but it has to stand a more important test and furnish a proper softener to give the wax the right cutting qualities. This can only be determined by making up Disc Masters and recording on them. A considerable difference might not be apparent until a change of season from Summer to Winter might make it impossible to use the wax. The Caustic Soda is the same as used by the Edison Primary Battery.

The Sal Soda must be recrystalized. This is not a matter of purity, but the anhydrous will not combine with the aluminum.

If the weight is not all crystals, the proportions are not correct. The aluminum we have been using is rolled sheet metal which we have not tested in any way but buy it for commercially pure aluminum. If there is anything not quite clear in the preceeding, or if I can

be of any further service in regard to this matter, please call on me.

W.W. DINWIDDIE.

(2nd.

(3rd.

(5th.

[ITEM(S) FOUND IN BOOK]

Pebruary 25th.1918.

ur. J. V. Hiller

For

Mr. W.V. Hewilliams Phonol Hesin & Wax Dopt. Chemical Works Division, Edison Storage Sattery Co., Silver Lake.

The following data in regard to mechanical work on wax blanks was furnished me for you by Mr. Copfort who was at one time foreman of the Shaving Department.

SPEED OF MACHINES FOR FINISHING WAX BLADKS STANDARD BLANKS LIASTER BLAING Roamer 140 per min. Boring 1200 per Hin. Edgine 3080 " " Pead 400 Rough cut Arbor 2850 " Rough Cut Arbor 2850 " " Foed 325 " " Food 575 " ** Shaving 1800 " Edging 1875 " Bovel 2035 " " COMMISSIONAL BLANKS Shaving 1117 " Renmer I40 Per Min DISC BLANKS Edging 3080 " Rough Cut Arbor 2364 " Houghing 344 " " " Food. 320 " ** Finishing 330 " " Shaving 1800 " LENGTH OF BLANKS DIAMETER OF BLANKS Standurd 41 In. 6-1/8 In. Standard 2.187 In. Commercial Commercial 2.335 to 2.212 Haster 4-II/16 In. 2.225 x 2.235 Master DISC BLANKS HIGH AND LOW 3/4 x 10-2 . Commercial 2-3/8 to 2-1/16 2-13/64 " 2-1/16 Standard

W.W. DINEIDDIE.

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Speech o	Imachy	rer for f.	mling 1	was blands
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Standard (410 ha 9/10	_		
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Sharing -	1800 " ".			
Comm. Claud.				• .
. Reamer	410			
Randalo	2364 "			
" " fee of _	320			
Shaving	1800			N .
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Rough art alon	2850	Stand		
Rough art alm	1875 "	Master		
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Sharing	1117 5 .	Stand	. Val 9/X1	
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Comm 61/8	Master 2,225 X 2,235
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handar and a second of the sec	Lean Francis Martin, Landin C. C.

Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments -- Disc Plating Books Notebook, N-14-05-28

This notebook was used by William W. Dinwiddie in May and June 1914. At the beginning of the book are formulas for a silver solution, a reducing solution, and a washing solution; these formulas also appear in other books in this subgroup. Most of the entries describe experiments with "commercial" records or submasters washed with gold dust. The results and appearance are noted. There are occasional references to experiments by Moore, probably Sherwood T. (Sam) Moore. Also included is a list by Edison of suggested chemicals, with a notation that he will make additional suggestions if these do not work. The front cover is labeled "Silver Plating" W. W. Dinwiddie May 1914. "The book contains 28 numbered pages; some pages are blank.

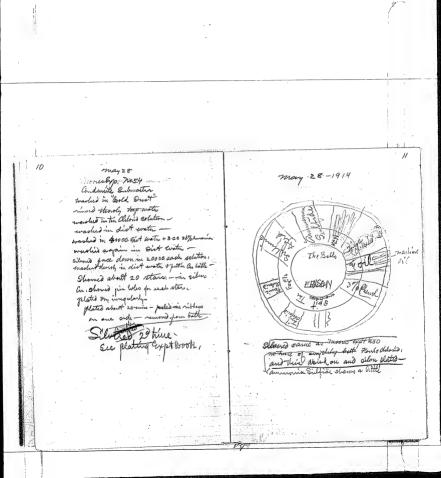
For silvering morrors Formic Aldehyde Process 4000 cc Aist Water , 80 g. Silver Withate (33 cc) strong Ammonia 26% Sizoer Sozution Arminoria added stowey to clear they the Nitrate Silver solution (same strength) added a few drops at a time until solution is straw color, Filter-thru paper 3000 cc Dist water. \$ 50 g stannous chloride olear with HAM few drope HCl. wash or wet thoroby with c, X (What) water - do not lot dry - they and pour immediately on surface to bridge remove from robition before salution becomes muddy,

Commercial Kreene Commercial Ricord The Oldond & looks good one lighton washed with gold Dunt to chloridate 150 CC Silm ,50 ec Preducer + DCC Glycerine Several Plans - Surfacel downers, but a good west Commercial Record with Gold Dust 150ce Silve Commercial Record 100 ce Reducer 45 ce Alcolollooks good - slite Zellow Several small others, washed as above 150ce Silver Sund stan out a sugar any beautiful white coat. Same only 25 ac shohol

comment heard - washed some as proceeding and 20 g. grammated surg and added to reduce the surgential surgenti

Commercial Busons Commercial Real same teatment except washed in Bald Dust mensed in tax water 10 drops of Acetic Acid substituted for Attaca (20 ac hearthal to a granulated Engan any gellowish someony added to reduce -Ntine acid makes reduction much slower but silver Same 10 dropes hitric acid instead of 5 drops-

May 28-14 Moores Experiment #50 inluned with joined Adapage polition. treated may write the choid Condinsite submarter washed in Gold Dust minera theorely - tap water rinsed with 400 cc water +3 cc anno wayled the choir solution see plating Exp Book page 16 washed in Dist water monated in dist water - 400ce aunumia sce - Selvered face down 150ce such solution !post back in assuraira solution - then to latte -Showed only one star- edge did not plate good - not enough siles solution place on mucie near inside pulled after plating 3 min - 1 - 3 any. plated very imigrouly.



Persones Experiment 58 ng plating colutin + 96 % secolal hashedin Gold Dust as Certion + glucou washed in him Chilored , + riture acid washed in dist water. + Cozefu inthe washed in ammonia solution 3 cc to 400cc 200 ce reducing solution +10 drops HNO + 1+202 200 ec Silve Arlution Gucarine But back in ammonia solution v Ethyl alcohol I rinsed in aist water - showed many small plans, tent corned Methyl alcohol. Pyridin very miniformly in Coppur bath -Phenol la 2% Joh. I Glacial Ocetio acid glucose Andina Oil - 3/ sol u wales Water Solvalle Dyes -Chloral If none works will give list of many outstance. Very sof we alsohal will reduce Opaced of secucion pecobalel

Communical records May 29-14 Small Dises, Celluloid -15000 reducing robution 4000 95% alcohol 25Ce Silva + 25 CC Reducer + 1 drop 1+2103 150ce vilver solution U.V. clear solution slow reaction hacked same as probably page turn 4/250 fine cost slow, face down out one pin lite - V. clear solution silve sticks u, v. tiglet. | same +10 drops-AMO3 - no reduction of Silan. 33 mu + b dropso-H 203 - V, slow, V, char thin deplosht-2 (same so above fort + 25 Ce Alekol-give contribur no holes - several expets Some so about 1 9 glucor - solution terms dark books win quel - them blash - plates muddy looking silven 3 flame as (1) that if 10cc Cobyesine several stars confoce looks consary Same as above + 2 CC of 3% of whenter reduces viguilly solution times dark 4 Same as (1) but +10 q quantité sugars fine biglet coat silve not regular -3/ Same en (1) luit + 20 g sugar and 20ce 95% health Some as above + Fee purpide hydrogen & Silver all axidered 200 mediation) same as above +2 ac actions - no effect Same as above +5 ce 170 rolution (6-4) an acc, of the absorber.

Vame 1 May 30 mois Eyst no 60 (2500 Silve 2500 Reduces + 100 Coppulant Washed in Gold Bust Solution Rinsed in tapo water washed in the chlorid 2500 Reducing 2002/ aminim Bass washed in (2) Dist, waters 200 e a reducing estation + 2000 95% Alcohol +20 9.9 mulat 1 - turus light branen -125cc Silver Engar + 10 droper Tuttle Acid { 2500 Reducer Schoole Doda? Within depoil , 7G (200ce Silver solution - ty again fine coat - imifine - but overal stars and very poor edge - would not wet! (25CC Silver Pasce Pranen 1+200 Auth Arid But in path and would not platte on assessment of poor contact at edge -12500 Silve (25 cc Reducer 23 drops recticand) terms harte cleaned with withis acid and grafited, | Strcc Silver | Activated action about theme

Theories Papt 61

plated annue do sero 60 except

that edge very well nutbers

with the dellowing aday plates better
them 60 But pion. (7 stars)

Busce Silver - 20 dryes Andrine Red Bil Solution makes white precipitate in Reducer
25c c Silver:

2500 Reducen +60 drops Ariline Model Tollater makes white precipitate introducer - (Stite restraine) - Silver come -

(2500 Silver 2500 Place Amilia Oil Solution and Solution as the Amilia oil that mere solution oil that

25èc Silve 25èc Reducer + 4°CC Blue Author Gil Between + 8 èce Alcahel- not so rende volute precipitate robbiels in colubbe in alcalol. but colutto darbeurd Erocus.

25 ce Reducert 5 cc Abrolate Wood plated megulan,

June 1-1914 Lasted in "Good Gust" Jane 2-1914 Same treatment as next -rinsed in Tap, water preceeding except washed in Benjol instead of Alcohol and diet water instead of tap water washed in Alashol. wasterd in Tim chlorid. washed in two dist waters several-stops 1 200 CC Silum 200 cc Reduen + 20 cc 95% Alcohol Same as above except, washed in Temperative oil instead V. fine coat Silver Stars Benge, / staro, Best

Jame . H. made up Redwerne dolution (10) 2000 cc water . 75 ec Formie Aldeludi 200 ec 95% Ethyl Alexand 200 g. granulated Sugar Used (Pyrogalol furth Mis reducing Solution - worse than with regular seducer. Supage 1 Plater vi fine with the time Chlande wash, - use 20% more of this than of Siturn colution, washed with 95 % Alcolol after Tim oblaid - looks finewashed with 1% Tutric acid then 95% Alsohol after the shlowed, looks fine washed with some water + 25 cc 37% HCZ after the Chlorid - there alsohol -Smeany - try again - may not be due to Heli All above have stars

Used Jegungalol instead
of the chloride suggested
of the Ashamoth —
would not met edges well U.S.,
showed stars v. Vad.

True 5 " Tune 5 Moores Exp. 63 (Wave all arres) Morres Enb 65 toushed in Gold Growt Washing Bold dust " Dist trater -" Diet water. Tin chelond . 11 Time Cheloria. " 95% Neobol -... 2 dist waters -" Dist water -200 cc Silva Solution _. 200 CC Silver Solution 1240 cc. reducing Solution page 23 240 CC reducing Foliation (Blacks come did not plate - where it Good coat of Thin. Ewel v. small stars. rounded affound did not resime pressure comer not furgitly evaled in copperwashes in 95% alsohol triped dry with rew towell edge grafited - blown off this area suined to be anode and silver exten of! after plating for some time recelled at this place - never covered aupper plated on clip and soge- and on opposite side - This part seemed to be anode in feeding appoint side. Storted with too much current

26 200 ce Silun (20ce Silva 240 ce reducer +5ce 5% solute Erec reducer lage 234 fewdrops Deleton of Dumonium Sulfat Deppend procepitate von slow reduction no Silia Reduced. Solver bright their sound or lance as above but with perfectly dlear - 11 Potoss Unomate Same reaction Malus Stars roce Silver 22 ce treducen + small and Hydragine. Bulfate -Pretards reduction Very much _ tried twice zoc e Silver 22ce Reducer +1ce 5% solution Aumonium Bulate 120 cc Silver 2 °CC Preduces 1/4 C C 5 % solution.

Reducer No 3 2000 CC yester 75 CC Formic Addlingthe 200 CC 95% - Etingle Alectic C 1200 g. granulated Sugar -25 EC 1 5% Dolution Komerow Suffet

Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments -- Record Varnish Books

These five notebooks were used primarily in 1913 and 1914 by William W. Dinwiddle and Sherwood T. (Sam) Moore for notes on the varnish used for Edison disc records. One book has a few entries from 1916. Other experimenters who are identified as doing related work include Charles T. Dally, H. Grimes, and Archie D. Hoffman. Included are tests of various experimental varnishes and different methods of varnishing, along with tests of how certain conditions affected the varnished record. Also included are experiments aimed at resolving specific problems, such as preventing wave formation on the records during varnishing. Some of the work in these books is related to experiments by Edison, Dinwiddle, Hoffman, and Moore in a four-book set beginning with N-14-04-30 (see Notebooks by Edison).

Two books have been selected for indications of Edison's involvement.

N-Number Labels and Inscriptions on Front Cover

Selected Books

14-02-23.2 "M" 14-05-14 "Davis"

Books Not Selected

13-09-28 "Disc Records"; "Varnish Dinwiddie"

14-08-17 "Dinwiddie Cresol -- distilling, etc,"; "Disc Records"

14-08-19

Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments -- Record Varnish Books Notebook N-14-02-23.2

This notebook was used during February-June 1914 by Sherwood T. (Sam) Moore and probably J. W. Poole for notes on experiments with varnishes, presses, and manufacturing processes for disc records. Also included are entries relating to experiments with powder blanks and with loading the blanks into the machines. Defects in the varnished disc records or prints are indicated. Charles T. Dally and Archie D. Hoffman are mentioned as doing related work, and some of the entries may be by Dally. There are also instructions from Edison to Moore pertaining to proposed experiments with disc record blanks. Some of the entries include a notation that the experiment was done for Edison. Pasted into the book is communication from Edison's personal assistant William H. Meadowcroft containing a description of Moore's work. Among the loose items inserted into the book is a one-page note in Edison's handwriting describing procedures for loading blanks into the machines, pressing them, and shaving them. The work in this book is related to experiments by Edison and Moore in N-13-12-08.2, Notebooks by Edison. The flyleaf is signed J. W. Poole. The front cover is labeled "M." The pages are unnumbered. Approximately 125 pages are used.

MFG STATIONERS, 96 JOHN ST. AND 19 PLATT ST. NEW YORK.

Feb 24-14 - #632 Var Lot * 97a Try one machine to day flowing blates the regular way! In plates set on rack 2 hrs. wanted to See if plates would look better and more lover than regular was Jul 26-14 # 632 Var fot # 970 Taged one fot 840 Plate 632 Vam standing 3. he in layer thin put in oven and have regland way Joseph of oven 90 F when starting Heb 27-1714 Var + 632 Lot 97 A Kecured - 340 Plate Defects uneven. Bubles -Raised -Chipeal R - 3 Discords 290 unever Plates Passed - 2 3 Small B 407 OK Plates 720 Plates Transfored

Feb 28-19/4 Becound 420 Pate Tel 27-14 Having very from success in transfer Van 11632 Sot#99. 2 Hes Standing in Buch's fix overs, as plates are so univer the take plato after set and submering in Jan of an offlowed 2/27 mg alcohol leting alwhol run over face 216 OK of variety two as three times, they hat 24 Bulles went Diet 129 uneven Kennies - 11 In rack to dry someron - 36 Plates Transfored Poole Feb 28-1914 Flowed 2/27 Received 15-4 Plates Transfer in spection Clate This or las 24 Good Plates got ho Val Transferred acc Com hors 8 3 uneven Passed . 32 Bubles " 3805 97a 682 189 Plates Lent to Press feb 2-1814 Received - 420 1 Turned Inspect on 2 ero on Re Var#632 Set 99 got no var Received OK Balles - 10 97ª - b32 948 Special. Kaised - 10 2. How on rach Lot "97 a " 632 236 user ren unever - 25 34 Kables Passed 118 uneven 11 25 Good Clates 377 Plates Frankfires Schedule - Puniting had many Pos Pont 4 lowed 2/27/14 Testing Deft Fet 28-191 Tot 97 a. Var 632 Black 719 - Bed 236 Marches Scratteled hir Holes Crackey Port

3/4/14 The Regulary 240 reads Varnish 632-106 and 107 this sum free flower easy, 23 Por bunt Ofto baked surfue look good lette aggrebal. see Thompson, This reports was taking from the board no tester reports which would be twice the dis, Ap 2 hrs on rack. 236 record 3 cracks 65 for funt 3/4/14 Vernish 632-104 50% Por funt

Reg Varnish 632-1/2 Va 5.52, Served frely for 7 to 1030 there Thusburg and at 3 FM very Shegghe and getting worse Special Varnish 764-114. Flowed fair Vis? Lee Francisco see Printing

March 7-1914 Speed Var# 764 over #2 Sot # 114 B right work Necessed 700 Plate Defects Raised - 3 Cracked - 3 Chifred R - 11 Datchel Plates - 3 Bubles - 29 wever - 49 Discards mall Bubles Pallad 105- Plates. uneven 1+7 OR 350

test on plate 5 - 2700F Charte 108 lbo 110 600 Itam sange 8,25 am 11.25 PM.

Salley Power # 2 Sur 110 6 Thould londed with sorape set, tim 98-1 mi 6 monich loaded with caraper set 52 hours. Time to scrapes 1.20% 2,38

march 14-1 Keelamid Clanks Redained Blanks ground Transfer blank (antho Vamishon) #1. 815 ans #7/9 powder- reg # 2 - busines due to Red Stats #2 23 gms # 1/9 sprider. 87 gms ground blank. #3 (228 gmv #719 purlu 122 " grand blanks OK- Pour Jours #4 175 gins # 719 fonder 4.5 \$ 140 grows #719 bonder Used 632 Tax - 119 1 6 262 9 ground 6 Court Swowind by Schigh Con Wheel and apt Horles Catarangua, Pa, 350 gm ground blank. 95% de 180 mach this blank sracked in making

Noor2 M. Edison moore says additional presses up, and they hope to Hiem Herl/also beeg necei 75% would and in May plane of the powder blanks , fife Sample wice rej

2/23/14 Here is those Exemits we should true 2nd | Dw | 59 | 2/3 | on blanks -- You know I guessed at 6/4 % u blank & may be too much or too Little no 225 was rendelided -Por Plancles Istellar Run thru 840 which is 1/2 133 my full af Intel Trains The Thenal varnest in blank \$261 to have /4 more of 6/4 The 840 blanks having one fourth less 6/4 Man Rag Grankich 1 Podr finis 074 212d Framy 20

about 700 Franspie bla #17 63 blamps 632-90 Varnish 470 21. 57 Penla -madre 504 Viline range so they schedul 74.6 % 200 110 Punto 224 Printer 200 minning school Porform 13 cracked 18 Cracked Poor Somit 075 Trad Frank 34

on 3/31/14 his man finite. in there mather ward made Hamk in thourigh aligh 01 3/29/14 I transform James 12 in all use negotation & 460 15-500 bear, got 100 % Print 10 ok I compad I prochant We are now my the divi one brola Therence Lane Sattle 632-140-A Vumsh

Vacin Dryon Jask Falfman

Spoint blands: #719 Varmsh. vac of harmost, 3,31 5 3,40, ng This Clark food took golf to -110-Jab. 3,50 23? Mes. 3,22 124,0 200 125.8 216 11 11 125/3 252 196-0 2,44 б 127-6 σ 127B 7,03 3,26 4.04 5,41 1298 1276 2,35 2,52 4.45 130,0 4,00 181-8 3/18/14 3,24 2,30 139-0 3.11 3,19 3/19/14 134-6 3,18 135-0 9.07 V36-B 327 459 2.54 2,12

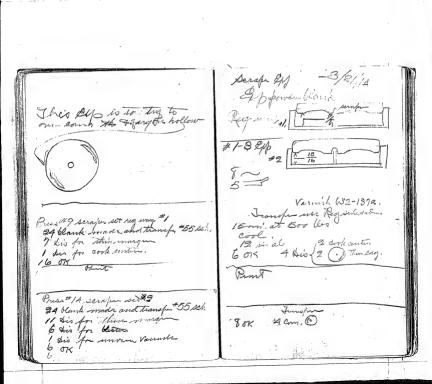
Cab Hajhmann 2,28 3,39 3,07 3,58 5,05 331 112-B 000 at 700 ann July 70' 10, 50 4 3,37 3,28, 406.

9 all life for schamped 9 all air futtin over Ather 3 than, States to 100 to some Special Vannas 431/14 ※777-157 W 3,53 3= 9m Vetarry of the in blas All Dig This and swif they well

En#122 Ott 1/2/14 4 Varnish with 1 coat A bis (3 Thin theram Transfer neg schiedel 16-500, V682-168 or 2 look good Dist Mint Ille raine

1/A/14 Jacon Canbo 14 lest on forvier 60 to 66 pm Think Hurl

March 20/14 Expontoadily blank leaded 11 mithonge blank mat Enked & Transfer 11 bland look good ur primes



Tremofun 24 blanks Varnu 1 632-138/3 15 m 500 lle, Hary un hollo 1 Varmis (cracks Pinto 50K, 11 P. Sint No creaked

Special Blands Sallen Blank Spreaded in #782 Pank (reg 719 blank)

Varmsk 770 x with regrammed gime #773× 5 fembiand & Paise #176 - baked I hor in over 220°F 100% grown blank

Specal blank #768 Deg reber and try 1:47 Transfur use reg schedul 10. - 60, ble (35 to 1) blanks (82 made Varish 632-150 Transform use regischedul 15 - 5001 112 Fumpher made 19 com 62 Deb 21: 00 to making of in scrape 49 Dis due to making the blank lick dropping 1 Dis chipper in handling 7 Die for blesten on one side in scraper, and lid dioping Des cracked 8 Lin with blisters I think doministly to holly spat in transfer plans thenting was rea chedu Printing us reg schedul pint 30 mall king oo in all 22 from front 11 cracked-8 ok 5 for 8 crachi

3/26/14 Special banks 769 blum An #770 blanks #767 Clanks 832-15.0 Vanish 7.632-150 Vamish Fromfin mer new schedul 10-500 (6) Franchi 104 mor rigoril, 10-50 alls 25 och 82nd 91 Dis/247 97 Smade 66 Des. 199 19 OK 12 and 40 bis do to making latter in scrape Des 55 of this dis I leave to the making of the blanks, eather the the scraper be prisoned on the lide of dr to lid droping 3.1 Dis for blistoso / 2 with blists on both 11 dis with cook centres Dunted 98 was rig set Printed 31 use reg Deli 110K 13 perry grant quached 18 porform A cracked Transpu 6 blister 100) one side A do to morn transferfelier

766 Danks 632-141 Varmick made 132 Times I thought this may be the course 29 ok 15 2nd of our Hister. rked 12 mothering 5 had blister on bught side I will suit this

-35/14 3/27/14 # 775 Varnish (King) = 796 Blanks Blank baked / his at 2.20 F° mustice of to his at 2.20 F° Transfer mor rig schidul Trains for use resp schooling Vis 234 OK 104 100 100 Pariton Jan. 104. por punt

112774 Varnish (King) 20773 blanks Varnish 659 166 Franchen use reg schedul: 15-500 on 30 2nd 12 125% 07< 71 128 Bustino Die 121 -97,16 5 Ramel De 103 3 But 2 arasked Dissect 10 6 Bubbles mar reg 45 5 Cracheck Por front dracked

Special Blank #776. Fransfer use nog sokull/16-500 Varmiste 699-156 200 102 075 9.10 Kis D. 4 102 por bund

regen# 1 run 2 700 lesrun#1 team gances 19 lo in Tur hour/ 2205 9-0-800 to a com 9-15-1450 800 9-30-160 901 Alm L. 010 9-45-1700 10-15-175 1180 -10-30-1800 1175 10-45-186. 11-15-198 1210 -11-20-200 1230 -100 11-45-2060 1245-106 12-0.200 ,1' -166 1-45 -1200 Dry #2 rum 3 4/11/19 130 -124 1.45-140 7-6-100 1-30-80 7-15-100 4-45-98 5-0-96 7 30-1.01 o_{cr} 5-15-87 5-30-90 5 A5-92 6-0-94 6-15-9 6-30-645-8

Old Word flower 4/8/ 1/9/14 ground uf Transfu blank 50% of ground blank The blanks with old word flow which is fine our burning run. Dee resulin Dio 15 175% or 46 Sis & cook conto 2' more feel Poor from

Solison Mon (Jin of apo 674) try 50% more free Phenal in variable flowing of Varmish Vio 3,40 To of plats flowed 690 Ofto baked OK beats 214 3 anakio rucino 9. HAles 9 Dury merm . Transfer use regischedul 15-500 OK 155 Dis 199 (61% buck hand plum use rea scholul #55 Print 155 cracked

Donk Cooding 14 #18 8 st. set seropus 1 mide 38 bin her -1107 455 veheduli

15 Sounder Dres for ade (2) with new foundamentales Ironafre on 1821 N press, Magha-work #15 Conder fress mad 12. blank. Truncife on #21 Ofun Try how

Press #9 one round loaded in the o By Souring About 12 m au Mongin Dis I also note where would were staster or shelves and pushed This servert itento the short is not (in frees that month bumped of Chiter to preso or propod. anniformer ove its sug way Smarked Tour macilie - to suntain 112 X Thingra all marked X are molde Margan droped from shell to ØΚ Margin 07< Manager 075 ok Margin

#16 Ent Powder blank This ex) is to handel the morels archered absumbang the badam, Com cours bodden of moild Transh 637-109-8 OT 5 on with a cook & is 7 5 with margin 1 margen 32/ oord 1 1 corole conden 1 margh my crawle Reg may same varmet 632-179-8 5 margin and crack I can't see encything in this

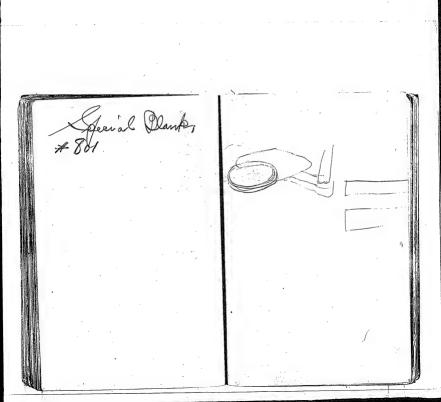
19 Epp \$ 15 prop I have represent the speed of the learning who we down to be of for me was harring of few in hammers running 60 fens Dist 6 Mare; in 2 of margin caracked. Transfer use #55 Schudul 15-500 nammara rumming 83 fem. 2 low center and cracker Swell Dub this Go for hasnot my will as just scrapers think this will give usegood result

Blanks made to Blank midde by might men Day muse had this prest of blumed who and plater gougan up Do They it ruled into (leoked Awalla cores and destino commed 48 scants Durance P. Ell Administr Transifu made 48 up #55 seka; Fre was man na # 55 schooling. 15-500 6 for the Warren State in fair shape home Land was made Mi The string was did. tocar revisely waters total sorabin. care in fulting lid on) on flish me lower. care in placeing mould on shalves Lowede 50% Tomas 180 marks.

blank. I has in her dry Clank # 796 3 2 hair Vas dry (bland Ergy, Blank The lange 55 The Vac. Duyer # 194 Varnish 60 Maris 100% mora Phales, 79A Varnich Transfor 24 use 15-500 OKS 24391 day I'm Vac Dryn 14 low rentes full out.

Chackes and poor print Cracks and por Vashash 632-Varnish 6 92 Xx 125-26 grown nulnels 596 ppm31105 1703 Vamin 632 5793 3/13/14 Records Vot122-128 crackes 505 Spenit 669 Varnich 632 3/14/14 Resord. 2890 509 2281 509

4/17/14 Mughtmun 4, PM 9/16/14 Thighermen Stanks flanke made for pres #4 Here # 4 press after plats being level up. was # 15 Coader hammer 60 fe Junista 24 1100 kg 50 30 1000 butt mesdo over show set of shelve 1. Slegh mangu use care in handlere moule from Coader to lid dropers test of bowde 50% 24 made Odanta #1/9 Mgg, Varnish 632-189.a. Corne 3 Marghe / Husto Old Moulds 34 Runted Poor pri New Moulds



for Lorapin Scrapu #36. #4 Briss #15 brees Fransfor 682-199-18 ME 15.4,500 Irand - 632-198-a Mg 7 500 Cm 2nd 1 O magn #IR OK 11. OK 11 cm / crop switter 12ROK 10 Parint mar 4.55 dehudin Varirech 778-1 Lable 0779 Xis 3-Migho-work of presum Levelu HED 508 Bo 0×10 Dis 9. Franche #632-202 made 48, 15-600 6h OK 46. Fed 1 Wis 1 Blue

Stevial Dank #1 B/2 hrs in Dryon Jace of with down one Franchis 46 us 15-500 Des 18 Transfer new MOR 16-12 500600 OK 28 20 Bluston. Vista Gara 1 mot filled · Prints Y Thin or work Blank # 795 2 hrs in Drye Trainfu 92 us 15 500 Orthe contin 12 thing The A orthe curl.

Jeansful 99 we 15-600 2 /2 thin Ha 8 blisting 1 burd 12 craep-Ping

#10 Rp & Bon Schedul nd 15 puss At bres when st 1200 tuned or an Transper#5 Transper 200 / 100 Varmish \$ 199-201-18 12 made gud 1 Dea O prints Ho Grada. 100 % in Juns

#10 Schidul for founder press #3 foros # 719 ax 1200 lbs J. comofu no 632-202 Varmske Print Printage #55 schedul # 10 Dehederl # 4 press with 26 scrape 100 % 1 blister

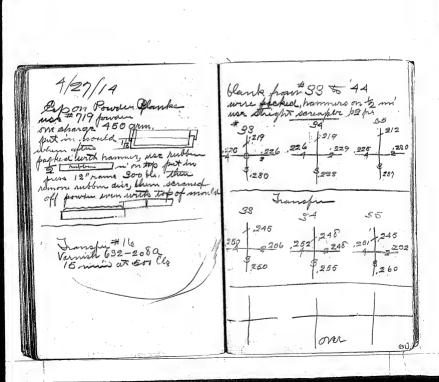
Blank 199 pour \$ 100 \$ 1000 4/22/14 #10 School on Ppusse January 632-203 764ked OK 24 Printed us #55 Com, (Cratta PP

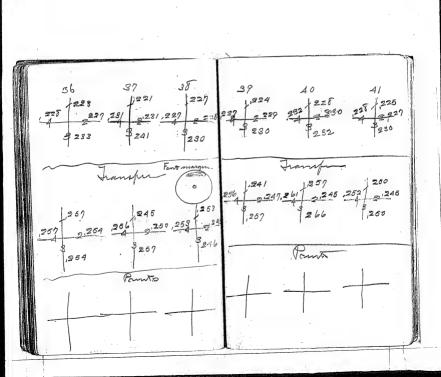
Jub Hastor + 23/4 1/23/14 #10 Seh, at 1000 lbs b Hr Edison use regitions for feater Paint ad heat 2/4°F of 4 to lbs Print at 120° 5 heat

38, sorahi #9 use 500 for Blayer is Bullon #1.8h # 10 use straight scrape #2 As 500 gran, Clayer rubb bourse Stor \$ 3 ly with humer -11 usa Straight seculo no hamburs Doo am 6 Canen 5 led use I layer at of ruther put in pour to good to the press sooller all with 35 saraju use 475 apr. Player of & mith4/23/14 Exp P Moule #1 Shear off 50 grs. How gm, Saw trines down

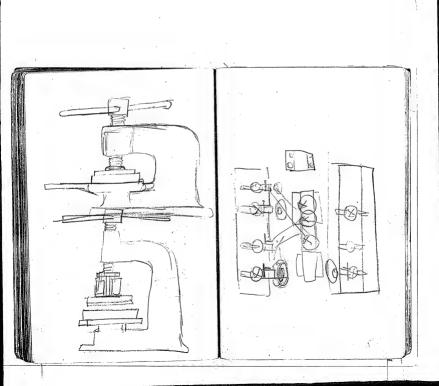
719 Danks 4/04/14 719 BRank Transfer 12 use 15-500lb Presto Varnish 779-205B N 12. Ind o Transf use 15 -500 lbs gudo. Varnish 779-205-8 Fransfu # 8 134 OK Di 10 93% Ind lank C. Dis O Transfor puss/2 Ind O Transfer fres 18 md O Dio 2. Bute Transfer prix 13 Deraper 36 Md o Dis Tanke Transfipres 5 surpir 36 1.10 Tred o dito

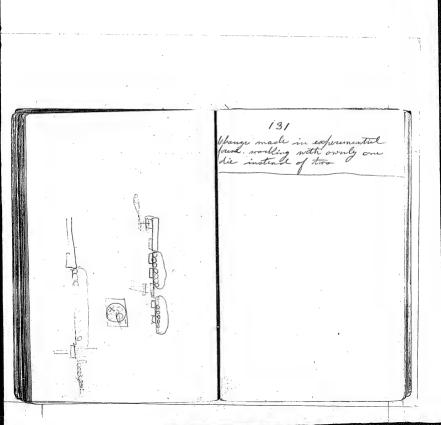
erap 87





225 So, hos place like in Bo, torremon . 2006 , to sarafun drowder off Think This en in 4/30/14 257 Prus rung





Fans in our staped, damper close of Dan 12 # 225 ,209 205 #224 ,209 236

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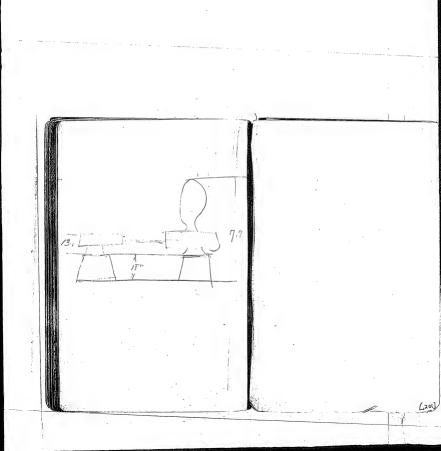
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Varnish ERT 76 50 49 3,00 8488 5.01 5.37 5.61 6.19 5.08 5.00 4.04 5/26/12 10988648 293 294 296 0/29/11 5.10

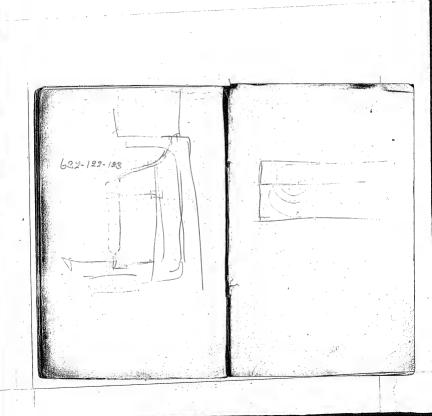
Making of Four blank
Stam to be 100 les in
fussing thirty is we will
tuse 1000 on gange

XX3-07842 9/12/14 New packing for blank # 842 Water Heat powed blank made from sings 1 to high 285-228 Ho Journe 3639mm 216 370 368 11 ,220- ,215 375 " 1225-,,220 372 11 blanks, mada, from sings 152 - 208 Waight 356 gms 18-218

6/15/14 Hew blanks



France lester 9/21/14 Sochum



[ITEM(S) FOUND IN BOOK]

After Londing - Press to prices - per 26 Seconds take to chaver -2nd (cul 20 15 Secondi. Dhaver - I heards pauses garager you 1. hum ZO Sec - or with The other moned on side - we get Z un 1 mm9 20500

Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments -- Record Varnish Books Notebook, N-14-05-14

This notebook was used during May 1914 by an assistant in the chemical alabratory named Davis (possibly W. B. Davis, author of N-20-0-72 [unselected]). The entries relate to experiments to prevent wave formation on records while varnishing. Most of this work involved the use of various resinous compounds, particularly phenolic resin. Some entries refer to a "Mr. T. A. E. idea," while others indicate that something was given to Edison for further experimentation. The flyleaf is inscribed "Note book of Mr. Davis." The front cover is marked "Davis." The book contains 5 numbered pages followed by approximately 25 unnumbered pages.

1500 F seems to be the movimm . How with stoucins soilor one of raute string the) and apply any the fire a room left with Ity mem. of a for decisely to the land one, then full and for the fort of 100 to for the land of the land of the fort of 100 to for the land of the la In practice the owner wares begin to from it what

may 5-14

THAY 5- 14

Mr. 7. 9. 8. idea . Town of about show.

Then even senor with a wine gauge and heat, at the same time diswing to

...,,

1.00 / W - 120° H.

2,30 - - /24 -

3,00 - 124"

Taying to day the planetic resin, which is in alcoholic rat, and flower over riches plate.

at greent these films on flood over allowed to stand for whach I

home, then put into a driger and healt for I home at whent 220 4. Un the removal of these floor the driger the resin

from has dried in as wares. The object of these officers is to present the transformations

The average viscosity of the seein whaten + 4.00

The dismeter of the dich =

The rolum of recorded itim selection on I cities = The thinkness of the day resen film ?

D The object of the reference to to remove the acception, in shieldy, and as thoroughly as possible before applying best.

Selver and transfer directly to recourse. pull to for & home

" 5" for is home.

10" for & Som

This heat for 1 hour 100 4-120 7 after which gravitally wereas heat and whene at different stages ray every 15

Two plates which had been flowed, and stood for two day. On to I was just a thin layer of martine or . put into onen at a temp of 140 F at 3.50 Heated for 15 minutes between 230-240 Ft, This wingth of time rendered them perfectly hard, when cold. If my difference, I should very the one without oil were the bother of 3 with the object of borning the A.P. of the abother, took some of the resin proletting, and delated with 1000 ale (account a stand over with 1000 - 9.00 170° 7: - 9.35 at 200° 7- 9.05 Praces of nightic chroming 245° 22 10.01 men trains But direlated riffler on redshing removing from They alway be alivered to cool in appearing gradually. (3) The same as 3 only allowed to east in both gradually. atentel - 1100 4.19 - allowed to stand with 200 - 3 hours Then heated or above, and allowed to cook without removing from

the gran. Others were to hear friended at 220 statempof 240%

(F) May 6-14 Homes a plate with resin which had steed on see soon night. " fresh solution Turned off vaccom fump. and heates for 1 hour at 120-130 1254 Turned off heat and allowed to remain. Total terms in over to annew with fairly cool. 5 hours We plate which were flowed with the whiten which had said bree night were from. Those which were flowed with new solution were fairly This experiment was preformed with the idea that the disks should be anneiled. after Otherwise one night these good one's proved to wrinkle mung badly.

Flores with require varnich and allered to stand for 24 diase. put its on over at 2300 to and oriented it is remain for Elm. coled in even. (ng) (19) makes some with matt in a watch given, and to heated, Determed a finite with 20th of running address to day and heated described to the desired the first 22 2 4 (Mg.) 1 Flowed with 2% copie addit, allowed to which my hours. Han heater. (Have with 200 time added, allowed a stand 24 hour. Then he ated.

Dany 9-16

The say or it is stone subset 44.62 642-(14)

1- mons- shire - dinger - Cally 62 -

by the arriver of & on Langue in favoure of a same.

Saleston a the transmitted and read South South

2 - 3. Sten the dense - 5/4, 02 (632) (14)

The track with the or respond to found by the standing mone obline honger.

3- postlem ander - 2400 JAS 118

The retire a forest of the activity of problems.

C. H. St No. = 86 H. C2 11 Hz 157.5 = 1:7.5

Therefor 100 gm of p-abboro- riches-benjene about god throther 80 gm of p-oblere-ambril

Preparation of p- chloro- anchine nitrated mono- Chloro- benegation

\$ 150 gm Em H2500 (50 " C. H. E.

nituted for I been at 6002. Wide completed the Sound of Some

From the follow formula: -

CHICE + 11103 - Cotte Ce Caz

113.5 + 63 = 1575

Though 100 gm of non-obline - Sugar, abouted Theretoing give 140 gm of the mixed miles compounds.

This efficient was preferred with just con 18163

From the above equation 50 gm to Hole would require epactly 90 gm of com. 10003 of 1.42 spr g.

Took 50 gm Cellel & heater for 1 how, in boiling 100 n Contre } with, broadly any mites -

compound was formed.

(m.)

Test - so gue Colle & C. 100 " funning 1126 } ratialist in the secon - grand 1126 } ratialist in the secon - grand 1126 of theory of might semperately second residual of second 122 of might semple of second 122 of might

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is the first some company = 62.000

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Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments -- Cylinder Books

These three notebooks were used by John P. Constable, Sherwood T. (Sam) Moore, and James Toy in 1914 and 1918-1921 for notes on expension to improve Edison's cylinder records. These books indicate that the inventor was still interested in the cylinder format as late as 1920. One book contains notes and drawings relating to various possible improvements in the Model X Amberoia. Another contains entries pertaining to the press used to make Blue Amberol cylinders and the printing schedule for these records. Also included are notes on experiments dealing with the composition of cylinder records.

One book has been partially selected for indications of Edison's involvement.

N-Number Labels and Inscriptions on Front Cover

Selected Book

20-10-25 "706-x-1"

Books Not Selected

"June 1st 1914. John P. Constable New Model X

Amberola. Mr Cook"

18-12-12 —

Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments -- Cylinder Books Notebook, N-20-10-25

This notebook was used in 1920-1921 by James Toy for notes on experiments to improve the quality of Blue Amberol cylinder records. These experiments, which were carried out under Edison's directions, illustrate the inventor's committeent to the cylinder format as late as 1920-1921. The experiments involved a variety of materials, including rubber cernent, lineaed oil, and coliodion. A note by Toy bearing a response from Edison, as well as some brief instructions by Edison, have been taped into the book. The front cover is labeled "706-x-1." The book contains 139 numbered pages followed by approximately 50 unnumbered pages.

Only the two pages with Edison notations have been selected.

Acc. 9, 1920. m. Edwon-The solication arxiv yesterday noon and I have prepared some of the blanks as for your direction. Will other instructions; simply to get now information rigarding the properties of the ciay rubba cement asphact mixture 136 andes formed to be slightly undersey. harted upon applying fresser sussion except lakely

Re with Brittlener

Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments -- F. Detlef Disc Books

These three books were used in 1920 and 1921 by Frank Detlef, Jr., for notes on experiments on the plating solution used in producing disc records and in the master plating process. There are also references to work done by Ludwig F. (Louis) Ott and Howard F. Redford. Some of the entries consist of a day-to-day record of analysis of the plating solutions and electrolyte confort the Disc Record Plating Department. Also included are experiments regarding attempts to improve the plating process by increasing the speed, substituting different types of plating, and casting a wax or plaster backing (instead of copper) for the thin nickel face plated from the master. The books contain some work on experimental disc composition by Detlef. Notations in two books indicate that Detlef was reporting directly to Edison.

Portions of the first book have been selected as a representative sample.

N-Number

Labels and Inscriptions on Front Cover

Selected Book 20-01-05

Books Not Selected

20-05-19 20-12-01 "Apr. 1920 F. Detlef" "F. Detl,ef" [sic]

Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments -- F. Detlef Disc Books Notebook, N-20-01-05

This notebook was used by F. Detlef, Jr., during January-September 120 as a daily record of analysis of electrolytes used in disc record plating. Detlef took samples and calculated specific gravity, acidity, and the amount of nickel, copper, iron, and aluminum. Inserted into the book are two notes by Edison regarding items to which he wanted Detlef to pay attention. Detlef refers to Edison's oversight at several points with phrases such as "Mr. Edison says" or "keep Mr. Edison informed." There are also references to work by Ludwig F. (Louis) Ott, as well as some loose notes (not selected) in Offs hand. The flyer is marked "F. Detlef Book #2 - on Electrolyte Control for the Disc Record plating dept." The pages are unnumbered. Approximately 125 pages have been used.

The entries from January have been selected as a representative sample. Several loose notes by Edison have also been selected.

F. DeTLef Standard Solutions.
made Jan. 7, 1920. on Sectiolyte Control M10 K, C, 07 = 1c.c. = 0,005625 gms Fe for the Die Gearl plating dept. 1/10 Mar Sr 03 - 16.c. > 0.006 866 gms Cu 1c.c. = 0.0064 84 gms. Her H302 Hg NO 3 solution - 3 gms Hg NO 3 per liter That is 1.9050 que Ag per liter per Kilon that is 19250-X . 27193 = 0.5180 2665M Ken Sil = 10.0, = 0.012 238 gms Ni = older new K Cn Sol. 1/7/20 47.4 + 4.000 KCM 11.85 Aglaster 47.4 = 4000 KCMS 1c.c. KCM = 10061386 KCMarl. 5/5/20 10.0 KCM - 12.75 00 Agille 10.0. KCM. . 00 6 60 48 gm. Mi Mast KN mul 0.029729 mo Hassex for

Mornial HooH - Normal History >1:00. 25.000,00 25, 6.6. 25,00 C.C. E.R. 10. H1504 16,50 C.C 25.00 c. C. 26,50 c.c. = ERD: 05 053 grams H_Soy = 1.0304 Normal. 11 1 CC, (HSO407 = 60,04370 gram Na 0 H & Co, 05356 gram Hr 504

of any 16-21, 1920. 504 : 1.C.C = 104370 grams NaOH , 05356 grams HVSU Normal NaOH = 16.6. 2 . 05356 grams H. 804 1c. c - . 04370 grams Na. OH. Faster: 1.0922 N/10 Ma OH: made from the namual N40H .00 5-35-6 grams Hr504 1c.c. = . 004370 gums NADH. 1cc = 100 5358 gm His solution - 40.C. KCM: 42.755 479 NO3. 16.6.KCm = 10.67 e.c. 749 NO3 10,0, KCM= 0.0055273 gram Ni.

9 a.m. 1.26.7 ... 0. 3 c.c. My 5-0 : 1.686gens. H CoH3 Or feelite 105.614gms. per liter Michel. : 02 ignes per liter 5000 deluted \$ 500 - 500,0 . 056 gmorper leter taken 5 c.c. sample. - 43.15 c.c. KCM. acidity = 6. 5 c.C. nov 5.03 25cc. Sample .00 6484 x 6.5 x 40 = 1.686 ms. HCVH30~ 125-632 12.5434 10198 (Frap) 06 10.0 K.G.O, 1.00 56 25 X102 0 56 .0080 Feros ,0118 00,02

Sample taken Jan 7, 1900 0.15 c.c. 24, 5,0, x10 x. 00 6866 . 010 gms. Cupen liter 1.93 James HCy H. Or berliter Nickel 44.45 KCu. Copker 44.40 XCa. aluminum = 14.8742 acidity = 7.450,0 my 5.03 14.5416 .106484 x 7.45 x40 .3326 Ni glyofim ,2032 6652 12.5783 VO671843 - Ni in 0.6x5 12.539.0 .0393 Feat 1,0, . X 1600 3.5 50ck-Caro, x .0056 25 x10 = 10,2000 40550592 10200 x 1,4298= .0286 108,1349129Wip 0393 -.0286 .0107 4303

Junfele taken Jan 9, 19 Speci Grar. 1, 296 Cu= 0.200005,00 ×10× ,006 866 1. 582 gmo acti pertil N: - 48.2-5- 500. 47.800. KCm. Cappen 48,200 - 4c.c.= 47.86 47.83 cc. Kon 77.83 x 400x .0061386 = 117.444. acidity = 6.1c.c. May Sy Dz 6.1x .006484x40 - 1.582 hon = 12,5476 12.5368 .0108 (Feat) ,OL. 1.1C.C. KyC1,07 X.00 5624 X107.063 alum = 10108 (Fear 10) -10088 FE-03. XIS 303 XIO=

aufle taken Jon, 1, 1919 ... takin Jan. 12,1919 at 9. N a. M. Cu = 0.10 c.c. 74, 5,03 x .00 6866 x10 0.007 gme. C 1. 5959mo. HC. Horfule .007 43.0x400 X, 006 1386 = Reidely 6.15 C.C. Mars vo3 x 40x ron = 1x5456 12,5370 .0086 (Feap) No 0.925 c.c. K. C.O. X. OUSGis X10: 052 · 0052 X1.4298= ali - ,0086 (Feal) NG -.0074 Fevoz 1001- alvoz X. 5303

Sample Taken Jan 14:1925 at 9:00 9.m. at 9:00 a.m. 1.280 10 cc. 74 5,03 x,00 6860 X10+ 1.738 gms HCvHso-pende 111.010 gms. per liter ,045 " ٠,, 45. VIX.00 61386 X 400 .04% " ., .00 6x84 1.4298 6.70c.c. May Sy 0 3 x 40 x 268 38904 .045 ,006484 3/490 1.73.771 .0643410 -14,5016 00 1625 17.5364 0.80.C. K.G.O, X.005625 X10 .0045000 .0088 5303 alum. .0064 4574 ,0088 - 303 X10 - 1047) 00466664

Saught take Jun. 16, 1920. at 9.4 59. m. 0.075 x ,006 866 x10 = .00 5 gus. - 1.258 1.5-30 gmo HCVH30- peuliter 102, 245 gms. per liter Michel This .. 005 gues " 44.00 - 4.3, =1.41.64 C.C. KCW 41.64 x 400 x .006/386 - 102, 245 grue 36 .006 1386 1184) 430,000 3447 7470 audity " 5.9 c. C. May Sy 03 ... 41.64 59x 40x 2064840 1,530 245544 368316 61386 245544 2556/1/304 hora = 17.5436 14,5370 38904 10224452 . .0066 .006866 0.75 cc. K-Gro, X. 00 stors x100 0,042 . . . 75 .004~ x 1,4798, 0060 1.530224 482620 ,00 66 GlFelvon .00 56 25 :00-60. FEVA, 10051-6950 7.5 , 000 6 alvoz 1.4298 6050. ,004 v 0003/618 x10=,003 578,596 .04×1875 00600516 The state of the s

Sample taken Jan. 19, 1970. Cu = 0.05c.c. May Syon X. 00 6866 X10 = 1,284 1,556 gms. acetic per leter 46,55 -110,c.c. = 46.47 c.c. 46.47 X,0061386 X400 = 114.104 aleminum ,003 acidity = 6.00 cc. May 5+03 x4 .006 484 = 1.556 050625 12,544~ 12.5364 .0078 (Peal) Du 0.90 e.c. K, G, O, X10 X, 20 56 x5 - . 051 10723836240 .050625 x 1.4298 - .007 9 (Fear) NG -. 0072 Feros .0006 x10= ,006 al ,03 .0060X,5303-,003 al

.05 x .0068 66x 10 = ,003 1.248 1.478 gms. acetifulita acidity n: 40,5-- 7.7 . 39,850,00 X,006/386 X400 = 97.849 .051 audity 2 5.70 C.C. X40 X June 7 17,5465 .. 0107 (Feat 06 0.9 c.c. x10x .005625 -, 05% , 0506 75x 1. 47982 ,0107 (Fear) 106 :007 Fire 10035 al-03 X107 x. 5343 C213

Sample taken Jan 73, 1920 Cu = 0.05 x.006866 x102,003 74 = 46.25 - 8.00 = 45.57. x. 206/3 86x 400= 111.894 = . 12,5 552 12,5360 20.e. x10 x . 20 5-6-5 = 1/24 .123750x 1.4298+10= .0177

taken Jan. 2 Cu= 0,10 x .006866 x10= .007 1 gms. Octre acid per leter m = 49,30- 4.0 = 48.96 c.c. 48,96 x .00 6 13 8 6 x 400 ,00:61386 11 81 400.0 (. 33 audity > 7.60 C.C. Y 40 x, 00 6484. 195-84 1.971 61386 Din = 12.5.488 12.5362 120,2183424 0126 ,00 6484 .00 5625 304 14.5 c.c. Ky Groy \$10 X,00 1625 = .082 14.5 194520 78/24 . 008156 x- 1.4298 .08156W .0117 0009 1.4298 4000 000477777 X10 = ,005

0,10 x,00666 x10= Cu. 46.45 -4.50 - 46:07 0.0 X400 X ... 00 6/3 86 = 1/3.1 68: 00 6484 andity - 6.80 C.C. X +0 X , 006 + 84 0 12968 1.763648 12.5358 .0164 Fearly OL 1.40 cic, 410 x,00 56 21 10782 VOX 14298 .0113 ,005/00,00 x, 4303

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Notebook Series -- Notebooks by Experimenters Other Than Edison **Phonograph Record Experiments** Miscellaneous Disc Composition Books

This set of eight loosely related notebooks, which covers the years 1911-1921, contains a variety of experiments relating to the composition of Edison disc records. The experimenters include Charles Dally, Archie D. Hoffman, and W. Jones. The notes indicate that Edward L. Aiken and A. Petit (Ademor N. or Albert O.) worked on related projects. Included are experiments with shellac and various varnishes aimed at improving the discs, with reports on the results and condition of the records printed. Some entries involve the use of alternative materials for the disc blank, such as plaster of paris and paper. Also included are notes on disc manufacture and "transfers," which provide information on the preparation of the blank and details of transfer schedules. Several experiments conducted during World War I pertain to attempts to adjust for shortages of certain ingredients, such as celluloid and lampblack. There are also experiments involving the reuse of discarded discs. The work in N-16-04-26 is related to the experiments in Notebooks by Edison and Other Experimenters—Disc Record Books, Nos. 1-26, while N-20-11-12 is related to the C. T. Dally Disc Blanks Composition Books, Nos. 1-14.

One book containing experiments performed on direct orders from Edison has been selected in its entirety. Another book has been partially selected for indications of Edison's involvement.

N-Number	Labels and Inscriptions on Front Cover
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Selected Books

"Shellac # 2064"; "W. Jones, Chemical Laboratory" 11-04-17.2 16-04-26

DOOKS NOT 36	"Exp on Records with Quick Setting Cement"
12-00-00.4	Exp on Records with clark octains commen
12-10-01.3	"Oct 1/1912 Mr. Moore Experimental"
16-11-23	"Celluloid [illegible] #4110"
17-00-00.2	I II II O. O. b

"Nov-12-20 Exp. on Reclaiming Records"; "& Substitute for 20-11-12 Alcohol Reg Powder"

"Tests on Clays For Bulk" 21-00-00.8

Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments Miscellaneous Disc Composition Books Notebook, N-11-04-17-2

This notebook was used by W. Jones in 1911 for notes on experiments involving the shellac used to coat the Edison disc records that would be put on the market in 1912. The object of the experiments was to reduce blisters, smears, and other imperfections. The notes indicate that A. Petit (either Ademor N. or Albert O.) collaborated with Jones on the new disc records. One note by Edison has been inserted into the book. The front cover is labeled "Shellac # 2064" and "W. Jones, Chemical Laboratory." The pages are unnumbered. Approximately 50 pages have been used.

MFG. STATIONERS, 69 FULTON STREET, NEW YORK, 45009

1911 20 Su shellac T. Lot Co 355 SIL BOLAY Boiled ten numtes. Cooled w. water Diluted to a Times volume w cold water and filtered of the as hidified was which care to the surface. Difficult to filter. Recipitated the shell by delute Hel. Right his The couldn't ff & brief to brown The land of the bring experiments on resultant ofter drying a used some and while flastic hulled it like molasses ca which the way has no removal does not conde readily Condensation may the by the way??

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Tried lifty the shellar acc with Instablic salla as follow 3 /2 gm Fetracklor Read acetato - too buttle n. G. Sames as IV Tried following: 1 gm difficultamaplitude 1 gm heramethyltetramine 3 /2 gm tetrachlor gm ord sheller Little to soft Reep Very hard and fuses frish, well very few billely but does not stay light les enough. igni dishinstamin 3.3 gm teta alilor 3 /3 gm tolication (pure lase) 3 /3 gm tolication (pure lase) 10 gm G. Condenses et on 10 gm ord philler Better . Little too nof 1 gm defle gland Lame as DI with 3.3 tetrache um sheller early and all Better into adming . In Guill and + 10 shellac n. B. condenses 1 gm om- toliglene diamine Ign- differing amine 3 /3 gm tetra clilo 118m sheller (ordinary). 4 gm titrachlor World fine toward

The resultant masses for 1.5 gm defleny Cannie formulae I, II, III, and IX on 3 gm tetrachlor Therrow lase became very hard on standing over might and were a little to brittle. No. I was the first they stook lest well much special beam to decompose much 9 gm shellac Shese five prefarations wer nelled of times and allowed to stand over night. Became shoot toligned Eintest Tried & maghtod in glace of the less on the subsequent remeltings differnalamine in formula # B. Lied following to recure? Keft lifered, gave very few buttle a softress: 1.2 gm differing amine stood hemelting 7 this Trichlorarimone: n. G. Condenses 3 gm tetrachlor naphthe Tried fure shellar acid 9 gm ord. shellar in seace of shellac, in all, the freedure formulae and the 1.3 gm differentas I man windriable conde porner or later, and decompose 9 gm ord rhellor worth Continued work with deflangl-1.1 gm difherylamine 3 gm tetrachla -9 gin shellic 1.7-gms diflienzlamine 3gm tetrachlor 1. 05- gm differentams 98m shellac

I ried the following modefications I gam differentamine 2 gms differnalamine .. at gom Borneol 3cm tetrachlor 3 gms tetra 9 gms shellac 2.5 gus diflenglamine 1.gm deflereslamine 3 gm tetrachlor 1 gm honobromated can 3 gmo, tetra 9 gms shellar 3 gms difficultamine I gm diflemylamine 1.5 gm Borneol. 3 gm tetra 3.5 gms diffiency lamine 9 gm shellac 3 gms tetrachlor thors too volatil 9 gm stellac Made up a /2 lb balu trial using formula & 30° C. Keft at 120° C for Townelled, preft at 110-115-C+ foured, Made 110

The beinglated acid condenses after Started wrotigation of the fune The resin acid exists in the shellar as a monobasic acid. This folymerias Birlish up the resident with ona ON 4 added Cotto ON and on boiling with caustic allation a tribasio acid . (Burediet + Ulyon ma Sou. a slocenlant reddish numats. 5 528) Obtained a quantity of the Aft. came down, this Aft. smoot, in ale. On filtering a. tribusic acid as follows: 50 gm lac acid containing a recurous substan 15 gm hatt very sol wale. Its mg. salt 1 l. H20. was even very sol. in alcohol. Boiled for 2 liss. On printating On Afting inth acid and extractions with dil A 250 4 a viscons mass supeleted will alle a recesson light yellow Extracted this w. other. austance was obtained from the Distilled M. other. Residue - the filtrete. impure tribasic and. The my salt remanning on the Blunglated some fure shellac acids filter was made into a suspension In Sayon figure with hatth and w. H, o m a sit francel aciditie then bolling this welstin under and extracted w. ettler. a dark a reflex with beison chloride. resmono substance was obtained. at the last a little Hol is adde a small ant of a black adhesive aubitans to fet all the neid. Often wasten would not dishabe in the other. The fillrate on acidifying and becoming very Edheire on heating haling out with other yeldes and with a slight odor of tempore

a fairly liquid dark red and stans Using The decolorised acid made Both This receivers outstances Condense almost unmediatel or 4.5 gm acid heating, 1.5 gm tetra Prefared benzylated and actilated lac acid by actiny you the ha solt 0. 4 gm different amine Condensed almost immediatel in the cold with believe and acetyl Tried following with lac acid. chlorides respectively, They both are very Dintrolemol adhesive fasty from subtained Resorcin which on meltine decompose rapidle Phenoresorcin attempted to decoloring come of 5 9n . C. Perchlorlinal nG. the last acids by boiling all days and Droxynashilalen n.G. then for the following with the the northalene acetotolindin of a light brown color although Chrohenzol drazobenzol Arisidorably lighter than before anthracene Call The tribusic acid which start henanthrene &-monontronalithalune. on Jetter as west once salt. dresin and the acid which - mtroacitamlide forsed into filtrate the B-recin Bensidin 2- resin slighth sol in ale Letremeth ed anidodlfeinluethan M.S A - resin very easily to claim Her ach lorethane dark red pol!

quantity of a crystalline substance Warmed a tortion of morobains. colorless and crystellying in form fattern Phobably lacic acid. acid with Cost out how three portions till all the alcohol soluble Too small ant. to do anything acid lad disslocd. Filtered and obtained a hark red belliate ained with. a gelation is drown drass on the Passed anhydrons NH, Through a filler. She latter on daning became toray sol. of sheller. Changed to a forfeet felly. This jelly solubly a hard derk brown forder, which carbonsed at 100°C arthorit meltin in hat water and let ale with nor would it dissolve in tetra great east. Ocido fft. a florculent or in differentamination heating: This residue was most . in of This when dried and melled Itcl shight ·alcohol condenses and behaves like and alcothol, Hostin alight out The encual lac acids The ammorioa jelly when melted Was not in strong first discolves in its own water alkalies. beingol" and then decomposes. aciton bergin the Pt Mu Mg Na . Li, al Zn te, salts all decompose with Boiled arm alcoholic stellar sol. frothing. with bone black, filtered, fitted the plitate w. ale water and 2 drops HQ Filtered evaporated fillrate to dryness, extracted residue with ether & on enaporating obtained a very small

Prefared another botch of lac aid On leading anlydrous nH, through but washed them better Other the an alcoholik not of tribasic & Mestin and drilling of the afcohol, a resum last and did not full then ville soft. is Stained whill on heating to some Time flows ferfectly limbely with There acids behave much better absolutely no decomposition and than the last as regards conaffarently stays liquid for about deneation, although they condense quicher than the raw shellac. I live with steady heat Resin too esft The solution becomes quite warm on Jassing the Not. Tried Unline Violet Base Suchulin The monologie and treated in Blue & Black with lac acids and amila manner doce not become with shellar made very trush warm but turns to a deep cherry marges with acids but the red color down on evaporating and decomfored too much with heating condenses almost at once abellhe the made the mass If the all brobition is biling while too brittle The gas is conducted this it the resin is bruch roter and very soluble in Using lead stevrate and \$20. The minibasic lac acid acts deflemlamme a abellac similarly. mers can be beft liquidat 1400 On colleducting SO, Thro The for 35 minutes (not long enough Tribasic acid at reain is obtained in all respects sumlar to the Le farate draw shellac as about. follows: rver

Raw shellac Van Shellar , Soluble in cold alcoliol + ether On further trial with a sand 2. " not in the bath and constant temperature 3. Dusoluble in The usual The season no. 1 kelt liquid for orsame solvents. 1 hr + and solidified with tetra 4. Crystalline way I from hat Ch To very hard mass havin The resins 1, 2,3, were very land a cut like hom good + tous decombred. execut the bubbles which are no. I fried and almost unmediated very difficult to get rid condensed no: 2. Decomposed with utumescence No. 3. Carbonned without kension Tried the tollowing as solvents in the wax melted readily to a hopes to get rid of the buffle Comfid blind. Best Few bubbles Dil acetic acid - Condenses The Sesin no. 1 when breed Does not dissolve drow coloring matter has no Even on freihitating the alcoholic better ... sol. A resin # 1 with water and drying 2 ters, subsequent melting Separated the lac acids. does not get rid of the bubbles. 1. sol in cold ale x other 2. " " " wisol in ether On warning shellar with 2 3. Insol ril a large fast goes into solution. there sesins behaved identica Falter distil offman portion with Those from raw sheller. finel oil and heat on sail Hath will telra and lead itearate Very few bubbles form and beef

Different Frakes of Sun Cac On chlorinating ale solo of monoand tribasic acids and resil #1, made of a batch with 3 to 1 tetra-lac evaporating eto the following recults Interior acid: Heated on some T.A. Pine 15/1 & Keft at 1250 five both Three days. Became more vicons each das till it small condensed. Herever got herder than tar soffind as Kenlar not Bad Monotoning acids: condensed in R+P Pur Garnet: 15/2 & Had to heef a a few lin hiver got herder Than 135° unorder to keef sufficien mholasses blind Bubbles bad Very Cara Resin #1. Became soft + viscous In all cases The politicine were Reculiar odor Jougher Laco containing more of less roam bubble very bably I lind at 140° bleached to a great extent M. G. Condense lease The shellacs containing rown flind On trying the fine oil methor or at 125-30 but buffle betty badly a larger scale at offering unfromble to get sid of the bubbles, R+P Extra 22 6 Very limbed at 125° of traces of fineloil being ver Cheated to war and alowed to cont deforbilet to remove distribut other heating Double DG 2/pfame as @

1 Button Cac: 18/sit By for the R+Pin a heart: 17 his difference (3) lest as to bubble when heated Diamond R&P: 18/ho difference to 150 + allowed to cool to 130 And foured . Very limited. This lac you telf at 135-140°C T.N. Pure 15/2 of: No Difference for the in perfectly finised condition with hardly a Circle R+P19d Sho Difference bubble at the tud of which time it showed no sean R+P Superior : 19 Pho Difference condemation. This was true R+P Special #213/4 Mo Difference D Jamphing algoth name buffle D.C. 221/24 no Difference both with and without since stearate, at first a little water comes of but soon it frees quelly without any V.S.O. 224: no difference affarent decomfosition. On heeping at 150°C (300° F) the regular working temp, many #1 Button Lac Pere: 196 Bufbles like more bubbles are formed and Garnet lac; quite large. Has to The mass condendes in 1/2 low 1 be helt at 135° at least to kee # Johne Jonque Button 18/2# Made following modification with This showed up much better Than The Samets or The butter 9 gam lac Toughest and West to 140-145 + cool to 180 while storing and very few 0.5 gm Stear ste fulbles confaratively and found

Following 6 assufted of Lace just an. mans. Pout this same test as g gmo lac privious ones onk Sheller Co. 5 gms tetra. 0.5 gms Stearate. Button: Very fair not so many bubbles after heating few minute 9 gms lac 135-1400 6 gms tetra Oho. 1: Just about same as regular. 0.5 gms Stearate Possibly a shade less bubbling. no. 2: Same as regular.) Possibly 9 gms lac Tho. 3: Lame as regular , I gite as hunch 4 gmo tetra V. S.O: Laure as regular. 1 gm stearate Price T.N: Same as regular, 9 gms lac. Washed # 1 Button Cac (R. P. + Co) 4 gms tetra 1.5 gms stearate (Excess) I day in boiling water Fillrate on Evaporation Stearate in excess causes a great swification gave a light many bubbles. sellow resur sol in hot water On remelting and peefing below This resin decomposed inneed -140° absolutel no bubble affected iately on steam flate, for ming in II I Tewww IV and a crumbling mass. many in Z. On heating over plane it carbonized with an odor like Curning rubber.

The furified residue from the The lac resulting from the washings agricons extract of # 10 Button process melto without a single bubble lafter the water has been there It 1. Conflitely in Oborlins water causing Should be keft at 135 ° G (275°) cloudiness on cooling when come, for best results. 2. Partly in naoH sol. White residue. 3. almost wood, in ale hot a cold. Determination of Wax in 4. Parth in beingol (Hot) #/ Button Rak (R+P) The agreeous act is After his acids as is also The newstrol braking it not tube + lac 15.3689 probable What the substance is 13.4638 Ja reinous mature. " lac made ut a large batch 11-2 to WHT. Beeles + wax 45.1652 A washed 1# 1 Button Car Boiles Vir his with Thre changes of water, for this the volls fridan 45.0765 " Way 00.0887 and dried. of wax 4.65 the las was appointed with Cp Bory filtered cold twashed with cold water and cold alcohol. The way was then dessolved from the felter with boiling beingde into a tarid beaher, wapratted dried and weighed.

two residues A+B = The total Quant determ . He Orolube matter matter originally extracted. in # 1 Button lac The lac les water = Briled 12 hrs under refling as three channes Divater! wit tube + " 37.230 28.2700 " Inc used 8.9600 This represents the vest loss in On was the washings to driness. remotes substance booking like It due to extraction will Had. lac remained but having an odor suggesting varillin. On made up a large batch of tetra briling of with water, fast went into dolution + last remained as a dark risin with the mechanical 3 lbs washed Button 1 lb tetra unturities 1.6 on sterrate A Water colube 100 mones Victoria Blue, 71.7550 118 leaker + runding the V. Blue made the recolar 71.4218 mass a fright green so add 11 residue 100 mems Blic Wolet who Blater insol. chanced it to the required to W Leaper + residue \$ 44,2990 as the ming seemed too soft 44,1295 refarated cuts a fasts of & 11 peridue 6 00 1695 each and to Want alided 80 Since both AYB were sol & posed oured lac making it 4 510 this the filler refter the trick His Harbend the Color considers glaction, the situr of the

ing the blank & making it muit the other two lbs sleft as the Wastic. His allowed air to were (3-1) for trial of was freeze out thouse before the wax amore elactic than asft as it was difficult to acratch antithe well but bent like alkeloid made of 10 records from Button Cut like horn. The 4-1 was lac uping 5-1 you Tas flind and considerably 34 Agms las Charden! 69 gms ler 2 gmo sterrate Basic Violet Working with Petted: analde 10 records from 3-1 this was very hard. It shrank and to from 4-1. Very hot out of the Grating without cooling day (92. F) and both These proportions proved to be to Hound I blister on the ten stro. They would not contract our the matrix enough with ordinary woling, The anade up ten recordo menos comented to the matrix so Rosers Pract TN Pure 15 /24 and Sure tighthe that when hessure was 450 cm lar applied the enclosed air 150 gm tetra Fried orline matrix with amber oil and neats fort 1/4 gu Violett oil n. 7. best but pockso High tend necessarin. Drags intractical as at causes but les on control machine to stick to matrix In fressing the records But results obtained by shorten

should even better than B51 him reproducing ourface was also better 20 gm recrate leave been about 1/2 gms as colo Treated TN with ale un cold fillers foured into an excess of audulated was Noo leal & made into necodo. Time water and boiled till fall was. Decanted and boiled again Reparted 3 times booking 12 hos Made upa large batch with washed TN ul all. Very hard lac having 5-lbs lac no oda of alcohol resulted. 2 Cho tetra mixed by a 3-1 repular bates 10 gno storate and made into rect is 6 gms Aciolet This dole crystallied almost instants. Burn the shellare was propable It changed badlon conting and Jasth condensed by the wa affeared to contain small pertile - the wash boller as it other A Condenced dop of dist The order take The cuptally ation an advantance Could not fetter as it was to as it became extremely hard Thick Byho two seems on big hot Continued solid on rehealte made a latel with washed Releated same form 2/2 fast lac small fot only help could be suched this Jely screen On reheating the other he as follows it condensed. Finally

was much more bluid and did not show airy signs of condeux ation. beating + sincles filtering but it conderied by the amade a large batch of cristallizes coating machine after 12 tetra from beigol Gutrifugea the Cristal & blied in the air Willrefat using IN the mother legior contained a los washed as tollows It orly mattel, probably mono-Chlormashthallene. On hactice Boil auth with asbestos this could be returned to the mat under that for 6 less. chlormating still. Changing the dater every how and sterring frequently Petter has evolved a new scheme Ground in mill and let bly in the which obviates The melting of the ofen air shellac entirely in the coating Made uf a batch machines. the dote is wanted to 80 mesh 8 22 gm cryst tetra and the matrix made very 20 gm stear ati hot the found dole is then 2 am notet introduced into the matrix Norn difficult to tilter as the and rolled till there is a shellad contains so much dist unform larger on the weeds. that it close the game after about 1/2 lie gove this this and while securing the ho necessitates breheating the other way blank is forked in The half and using another filter Trouble with regular dofe Ball this batch Eswerik

indefinitely to coat blacker. was that the tetra selarated on Vettet made the very unfortant discovery that blisters were due Simade a dose to fasticles of condensed dopo embedded in the surface of the 1/2 telra crips 1/2 stearate wax blank. We cut ofen a which gave very good results great number of blistered brecords and ill each case forms no tetla sefaratili a rubbery brown mass The batch of merbed (was made under the blaster. His, temas uf into records of which so were elastic tended to force a made from the whole batch. small area of the sheller dope ontward when the bressure It seems that in larger quantities the dofe turns out was removed. Mr. Edison a shede soft, so made up a was fully convinced that this was the cause of the latch 8 og 22 gm cryst Letter busters and unwestately ordered new blanks made from new material 5 gm stearate 21/2 gm vrolet On bressing the blanks brown Same trouble in filtering Batch C made a fine studell Dofe E we obtained no blisters with set of blanks and from the the exception of 2 very feculiar affearance of the dofe at endo our bubbles which formed over night under the coatings of him could have proceeded!

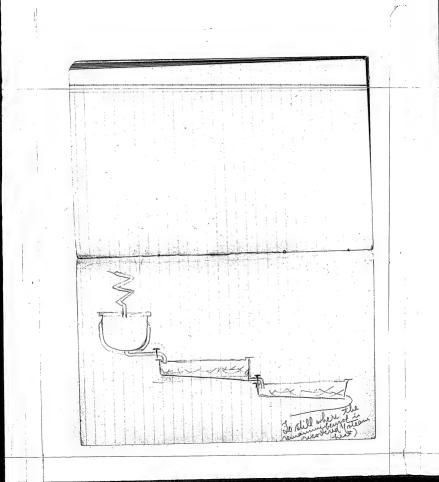
sines of dirt fartiles being blanch two records. They formed basters. north on the different precus each about by wich in disincter alarge quantity of large larticle and of a nature never observed were defraited on the 5-6 mesh before Possibly done to greasy Will thave repular bot made this Inner marks in The core We also discovered that in the bran coating. The blank must not Fried fiftering by melling ut The be butinshed against the gate markediento cha double steam. lit is it forms a gatheries of heated hot, the bottom of the Tetra which deposits on the unel fot being 100 which scream coat on a simage That cannot. When blind the uner bot was be persed out. Holowever the blank be swendy out annihisted slowly arawn ut and ofter about 15 min most of the on closing the gate no such dole had topsed through. The trouble occurs and bro scheme fail because at was experience we find that a rough coated second gives just about I, Non how to get it as Good a sepoducing surface as a turnshed blank having prough for filteration and as it takes about 10 min for the date to lass the And a small vacuum melling screen, the all that he alread pt made with & screens 50, 100 180 buesh these screens for removing none through becomes overheate The muck more effectively without An it cale be housed. cloging, as shellad used is very Alt Worked well the different

regular thickness of dole flamed. Made the exament of coalman faked and hessed. not la thister bolished montan blank with un the lot ((Hawk). Only trouble alleans brom heavy ale solution to be farticles of montan mechain shellac (dring careful) fulled up to blank before butting in baking 12 hors and tressin matrix, and some due to too Gord Meulto man be strained long burnishing Possible this Push This sulear also due to insufficient strong. (Pettit sand orders batch of dope with trible stirrer. uashed T We also obtained numerous blind Atto caused by the extander corbing 10 g crust Tetre the ends A blank too soon an J- In steerate thus enclosing air. (Can fix aside from this records were Strained this 3 screens. Wor abright. The color was a little too light. Will remedy & adding a little relaxoring this dope very liquid and works well. We tried a new mellod I coating to next batto with very to getting red of blisters formed by bridging over We first dressed the blanks with montain a Then gave them a very thin coat of date. This coat was then Clamed, thus breaking ofen all the air bubbles formed by the air occlided in the burface blank Me Then gare Their

Eferimento to get Rid of on lac on stearate 6 g lac (washed reduced TN) 21/2 of tetra (cryst.) 2 gmo steerite 2 gm difrenglaning (+ riolet) no conference succar affects on burnishing 63 Cac 200 stearate 123 tetra 1/2 og stearate moldswell. Too soft still to blank better than anything get found. no bridging over very liquid. no fullole on flaving. heed to F dole in for of a stearate. On long burnsling 1/2 of stearate out firshet the only sures feins the surface which may

"IN Edward suggestion: "mell the made batch as follows: dop in the Att. but on the screens ained the other lot unvers 10 % detra keep warm to be it date in 1.00 steasate 3 am violet this and doke all wond the 2 gm Strit black but it had to be kelt Contex best get. mich a lenth of time very fine working qualities the fellered matterial was Shear still ferbill- but confluxed. Tried covering the be wired of landy. Note with asbestos to keep up hear Little to bost. + as obviote heating while filtering but it would not go through. Made Latch as follows. Riceired instructions from his E. To 10 n tetra layout a plant for making 10 gm stearete in crystallying tetra Best blanks get. Seem to get id of smear in such large. Made a model plant for crystally Pressed but be antifully 1/12 records Tetra from Calu Coated I blank leaving A mat surface Pressed outfirst as as the rest which were Sarrinsh

103 cryst letra 10gm stearate J-gm riolet Found that so a CCl4 dissolve 300gm drude tetra, increasing the volume from 50 a to 260.cx = 42% ty volu 2203 TN 10 % regular tetra H dok. Couldn't make more 10 gm stearate secordo willion that the briling his water partly condenses the shellac. first. Must be careful to keep 22 g unboiled TN 10g cryst tetra 10 gm stearate 5 gm violet 5- gra a-naththylan



W. capor 200 F Degand come over 300 F

Shellac Way 50% ceryl + myricyl ala. 50% steams, faluntic & oleis extero of asmit 20 % of the raw shellar The resin acid exists, as a monotosic acid. On boiling with news for 2 less it is commented with a tribacio aid (Benedict + Ulzer I gm fure shellac acid = . 066 gm KoH I gon tribacic acid 4 oz shelow 20 grin 1st cro Dianit of helf bennet from filtrate Distill off helftring Dukaling all the got & retirm residue to

[ITEM(S) FOUND IN BOOK]

Make about, I blo af on the celkali-u ant bir acid of shell ac Betler In small dest portions before you make the govern I want to get shellac harder + taugher by gold rid cef the non exertial ugadient

Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments Miscellaneous Disc Composition Books Notebook, N-16-04-26

This notebook was used by Archie D. Hoffman during April 1916 for experiments on disk "transfers" performed on orders from Edison. The experiments have "E" numbers that correspond to the experiment numbers in N-16-03-07 and N-16-04-27, Notebooks by Edison and Other Experimenters—Disc Record Books, Nos. 1-26. The notes provide information on the preparation of the blank, such as varnish details, along with details of transfer schedules, such as temperatures, times, and pressures. The pages are unnumbered. Approximately 30 pages have been used.

486-E Transfer 1412 blanks - Brushed 1412 12th - 88 93 round temperature fact of being ped in 150 lbs surveyer & had so 5 Samuels Sture brees principe to 300 lbs hald for 12 Shurita

for 48 1412 blandes and Junish in takes demissed with Dunish inclo. in- somo comort-There print the solicie. Comment all diests. But 1/2 of them in Chemical some + 1/2 over over for turic lest.

quedie just of the Peter temperature sugars) for years per fully fe 150 des hord for feels by planting few runs to 300 feels by hold for 3 surjects hord for 10 midules, pool Edge as But. Tracked blanks having no Transfer the a wing my Des places Put at Contract outle put launding four of Chies tures surely 18 of the but the persent who to 300 lbs + hold by 12 briendles, take out of about 1925 o Fales. Transferrer on Jus = 12 55 Pot, 400 Overs 5 2 Red Blister 4 O. P.

4/27/16 489. E Bake 50 1412 blankor Hot Briefact. Puni them through nowing Trees when grand the plates ing whitele Transfer reg 14/2 timber schedule + 1910 one results Take 50 of 96 8 H Blice

4/27/16 4/27/16 491-E Blankor not Brushed. Tacked Haules having 1412 Haube, use Tomodo these presering Schedule -Put in contact needle pust. learning pur- Taken Sectionalius 180° Pales put the pressure up le 306 les por 42 minueros, stale cut, 125° Paker. If OK put Oliz Transfirs' Too theeles . Funshed

Dup of 490- 14/2 beauto not bushed had Edged 1/2 maller in Recenter-Jane 485-E Transpla Schedule. Trushed

Edge 24 1412 Hardin -1/2 mids less in chamation + maire 12 Transfer Hauses 495-E Poletule. 9 95-1412 & Bla Jus 1055 & 400 Vocas 2 Red Blooks, 10 O.K. These 10 Hours have been bridged

4/27/16 Got 102-1412. ane 12-1412 not brushed. Hauler, Reg Crowser States, of colitary sheethe first a pour server enjurance (processor) provided of 30 to 4 hours of 100 mily to 100 might of 100 hours Pot. = 102 - 1410 D. Bld. Janes - Gol 400 Oven 5 1 Red Blotis , 11 Ori.

4/27/1 #1508 Carlo Special 1412 Hands bushed. anth 1/3 familias. Transfer ontes Reg. Plans 9893-1508 Bla. Jan 1255 Pet 200 Jun 5 2 Red Blades 10 O.K.

498-E Just Reg. 1412 hundred Hundre pura Muse blander conting Transact Buggeldo, incluid of Priscock Plates. Time rec françajo politikus Oncesto final program in to se 500 dos sustado of 300 -

4/27/6 500 E 499-E 1 - Jus. Il Brushed. -Gers 1508 910 Junger Hand Press blanks with traced + Transces anth rig blutes Schoolule - put in Contact

needle just varing pier Olley View su after Sucher 189° Fabre
Out persone 19 500 list though for persone 19 500 list though for 12 munition, core of received Schooling but at sontact. Light france frie, When topuly before realling 15,8 Falm put present at 300 tos thouse for 12 Oscicultos - Oct 4 buncos at 1250 Fater. 87 93.408 Blk Vice 10 55 84 400 Once 3 30 d Blown 9 O.K.

4/27/12 501-Jise 1419 Brushed blanks Gere Juan Phusic romo Asse 22% 00 photos on 6 thanker + 1500 on the their 6 therein Reg 1410 Pourdine. There States are regurial List Transfer regular transfer reduction

4/28/16 Dufsticate of 1010 E Out of Briend Blanks Las an Win 2 how But but 2 goals Juanish on Myring offer after coal. Print derict wills regular mines are some totadule as in 1510E Schedule - Bring to Contich mudle of Spin- Aprile toucher alter made 189" Pales per persons to 700 lbs, for 12 Andrew by Cont to new worlower 125" Vales

4/27/16 10.05 - Emale so Bearing if ?? 505-E putters our two coals at Purpush Duhlicate, & 500 E posilo Hossinaro 1508 brushed Less some some of one was the flowing plates onto and saw Buil direct on bloude with Regulas Densie Mondos mois Print 12 Hander derict on Blandes in use waring regulari onewis madilla Schodule- Bring to Contract scanul of pin John tucke offers . nucles 180 ofpen put 560 to his sauce or for 12 Dicyclo there oool 4 renest at 123 offahr Schoolele - Princy to Contract model part of the Time Dear put temberatar maches 189 Facon put Jungur at 700 to per paganist, cool + remove at 12 to Fals.

1020 E Haylow 1508 507- E-13 Version theire of brush Das No per on 100at of brush Das 1003-E Jose Blanche 1000 = Ho Put two acats of Shis surjude, fue drying show after worth over, Just 10 Grant Mondie + 2 But Birect 19 blanks anth rig. Somechile - Out at Contact. owall of pri- When sew scales nache 1/20 Males pur pulsariles nache 1/20 Males pul pulsariles (00017 numero at 125 Schodule - Putri Cantagor, Continuedle of page - when liggenater get 188 hall had on \$ 3 9 100 per present from the good. I remain the good. Duly chairs is to cool olims Cold bline technics from Phin Technics from

ase 12 prints of 1001 Habe 50 reg 1412 blause Bushed out a Cogta of Bushing lanish, Opingt durch and blank with the One two hours before putting for good Crat Whe shows after percond Pration (Put at Contact oreedle sust of piece; Oshew turkendan reacher 1800 Faces Save the Harchit down mis but on 500 les foresait and hall for or at 125 or ale. Take 12 of there blowers + print direct and one Bes avorbates Jose Rig Thuris Home is. Monlds anow belief use do Chedule - Part in Condact. Hudle post best stiv , Have levilaritar get to 1800 haler put ors 500 lbg Wool + remove out 1/25 " Fain

4/07/16 March 12 Dice Printes March Int Bone reputy Va Conforti 2 Cafer of Musha Van 1004. More has gone 14/2 Brushed Duging a Know Teach. Sw 5 hrd-Parist 10 direct on blanches restes Adodul - Bening to contact proseculty to both from White they gates leady 1899 Jud on 80 bla pressure 1884 (Reg Amsic Peters to more Long find of the prio - Person limbertan freach for the prio - Person limbertan freach for for for prisoner to 500 to for 12 gradents, 0000 trumos at 1950 false 12 minutes Wood + removed as 1250 Faler Trivished at 4/08/6

Lobodule -Swedin Green flie . When temperature neacher 1800 rades put pransure to 700 lbs for 12 Swinders, there Ovol 1 remove at 1250 rades. But change bounded so final frement is 17 5 to 10 12 diversite

Notebook Series – Notebooks by Experimenters Other Than Edison Phonograph Record Experiments – W. W. Dinwiddie Disc Mold Books [Not Selected]

These three books were used by William W. Dinwiddie in 1915, 1918, and 1920 for notes on miscellaneous experiments, some loosely related to the "D" experiments in the Dinwiddle Disc Books, to improve the molding of blank disc records. Included are experiments with varied ingredients for the wax and various tests on those waxes. The results often note how the wax melted and how well it loosened from the disc blank mold without melting. Other entries perfain to experiments with the powder in disc composition and its effects on the molds, as well as with various methods of loading the molds. Also included are notes on experiments to reduce wear on the molds and to protect them from excessive pressure from the hard blanks in the mold presses. The problem was eventually resolved by pre-softening the blanks within the presses with steam heat before physical pressure was applied.

N-Number	Labels and Inscriptions on Front Cover		
15-05-25	"Wax Expts for Submasters W.W. Dinwiddie"		
18-10-09			

20-03-15 "Blank Loading Machine W.W. Dinwiddle"; "Disc Records"

· "War

Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments -- Record Inspection Books [Not Selected]

These seven books were used during August-December 1917 by Archie D. Hoffman and an unidentified assistant for statistical records of numbered Tere experiments. Each experiment usually involved a set of printings of a disc. For each printing, there is information about the number of records inspected, the number and percentage of "O.K." records, and the problems with each discarded disc. The reasons given for discard include pull-outs, crushed edges, cracks, and rough spots. Some of the results in these books were transferred to books in Notebooks by Edison and Other Experimenters—Disc Record Books. Nos. 1-26.

<u>Book</u>	N-Number	Labels and Inscriptions on Front Cover
A B C D E	17-08-13 17-08-31 17-09-18 17-10-06 17-10-25	"Inspection Reports — Factory Inspection Book — A" "Inspection Reports — Factory Inspection Book — B" "Inspection — Reports Factory — Inspection Book — C" "Inspection — Reports Factory — Inspections Book — D" "Inspection — Reports — Reports — Factory — Inspection Book — D" "Inspection — Reports — Factory — Inspection — Reports — Repor
F G	17-11-14 17-12-07	"Inspection – Reports Factory – Inspection Book F" "Inspection – Reports on Factory Inspection. Book G"

Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments -- Blank Transfer Inspection Books [Not Selected]

These three books were used in 1915 by three unidentified employees for those regarding the inspection of experimental powder blank transfers. They are probably part of a larger series, the remainder of which is no longer extant. The entries indicate the varnish lot, blank number, oven number, and the reasons for discarding, such as cracks, thin margins, pull-outs, "birds," pin holes, cracked varnish, and mechanical defects. Some of the notes refer to "special" or "commercial," rather than experimental, blanks. The initials next to the dates on some of the entries may be those of the experimenters.

N-Number	Labels and Inscriptions on Front Cover
15-03-26.1	"5"
15-05-11	"8"
15-06-10	"Experimental Powder Blank Transfer Inspection"

Notebook Series -- Notebooks by Experimenters Other Than Edison Phonograph Record Experiments Miscellaneous Experiment Books [Not Selected]

These eight notebooks, which cover the period 1911-1920, encompass a variety of experiments by Zachariah P. Halpin, Albert F. Wurth, and other employees. Included are reports on disconginal masters and master molds not completed, data on the printing and transferring of experimental records, and information regarding the quality of printed records. One book describes the physical equipment, mold holders, rotators, and tables used for electroplating. Also included are experiments on improving the wax used in disc records, the heat in the record manufacturing process, on the springs in recorders and phonographs, and on reproducers. One book contains information about repair of phonograph parts, machine tools needed for phonographs, and the care of phonographs and cabinets. Another has entries on cabinet design, along with tests of mechanical parts, such as turntable springs and governors.

N-Number	Labels and Inscriptions on Front Cover
11-01-02.1 12-10-10	"Reports on Disc Records" "Z. P. Halpin"
14-07-06 14-09-01	" Put On Presses 1914. Flexible Tubing Record September to 1915"
14-09-23.2 16-03-02.1	
20-08-03	" <u>Laboratory Notes</u> J. McCarthey" "R, P. Dugliss."

Notebook Series -- Notebooks by Experimenters Other Than Edison Group 2: Kinetophone and Kinetoscope Experiments (1911-1914)

These nineteen notebooks cover the period 1911-1914. They were used by Leroy E. Briggs, William W. Dinwiddie, Harry W. Doyle, Zachariah P. Halpin, Absalom M. Kennedy, James W. Ramsay, and other Edison employees for experiments relating to the development of motion pictures. Included are tests of Edison's home projecting kinetophone, as well as a "professional" variation of the machine. There are also notes pertaining to the kinetophone (motion pictures with sound), including tests to determine the optimal positions of the kinetoscope and phonograph for synchronization and experiments with the disc diaphragm. Other entries describe the development of complete kinetophone and home kinetoscope outfils and demonstrations of the kinetoscope.

In addition, there are experiments to ascertain the best carbon element rather "motion picture machine" and data regarding the use of an incandescent rather than are clamp. Other entries describe the development of a new lamp house, commutators, lens systems, screens, an automatic film developing machine, and a film drying machine. There are notes on various setups for the developing machine and variations in airflow, blowers, and vents to test the heat regulation. In addition, there are tests of noninflammable film, a paper fastening machine, new film cement, amplifiers, synchronizers, and cameras. Other experimenters who are identified as working on related projects include Addiph F. Gall, Daniel Higham, Charles W. Luhr, Charles W. Norton, Erroy Pearsail, and George J. Werner. Seven books with indications of oversight or involvement by Edison have been selected.

The notebooks are arranged in three subgroups: (1) L. E. Briggs Books (6 notebooks); (2) A. M. Kennedy Books (6 notebooks); (3) Miscellaneous Books (7 notebooks) [not selected].

Notebook Series -- Notebooks by Experimenters Other Than Edison Kinetophone and Kinetoscope Experiments - L. E. Briggs Books

These six notebooks were used by Leroy E. Briggs during 1913-1914. They provide daily logs of Briggs's work with the home projecting kinetoscope, film developing equipment, and other projects relating to motion pictures. There are also entries on other experiments including a miners' lamp, locomotive headlights, a new lamp house, an automobile electric self-starter, and a frictional microphone. Miller Reese Hutchison directed some of this work, and Briggs produced weekly reports for him. Other employees who are identified as being involved in related projects include Ernest J. Berggren, Walter W. Dinwiddie, Adolph F. Gall, Zachariah P. Halpin, L. E. Hammond, Absalom M. Kennedy, Charles W. Luhr, William H. Meadowcroft, Henry J. S. Rudolf, and Carl H. Wilson.

The two books with indications of oversight by Edison have been selected. Labels and Inscriptions on Front Cover

N-Number	Labels and Inscriptions on Front Cover		
Selected Books 13-03-18.2	"Experiments with Lights, and Lenses in Home Kinetoscopes. Also Aluminum Screens. L.E. Briggs I March 18 to May 21, 1913"		
13-09-17	"Automatic Machine for Developing, Fixing and Drying Motion Picture Film. L.E. Briggs SO. 3300"		
Books Not Sele	cted		

Books Not Se	lected
13-05-22	"Experiments with Lights, Lenses, and Reflectors in Home Kinetoscopes. Photometric Measurements, L.E. Briggs II
	May 21-Oct 30, '13"
	"Book # 3 L. E. Briggs"
13-11-07	
13-12-30.2	"Disc Record"
14-06-15	"Storage Battery for Locomotive Elec Headlights June
	15 14 F Brings"

Notebook Series -- Notebooks by Experimenters Other Than Edison Kinetophone and Kinetoscope Experiments -- L. E. Briggs Books Notebook, N-13-03-18.2

This notebook was used by Leroy E. Briggs during March-May 1913 mainly for experiments relating to the development of Edison's home projecting kinetoscope. The initial entry describes formulas for a silvering solution for plating glass. The remainder of the book is primarily a daily log of Briggs' work on the kinetoscope; the log is continued in N-13-05-22 [not selected]. Included are experiments aimed at adapting the incandescent lamp for use in the home kinetoscope. Other notes describe the work of Briggs and a machinist named Dennis on the development of an adjustable contact apparatus for the kinetoscope. There are also descriptions of new lamp holders and commutators. Some of the entries in the middle of the book contain data on endurance tests for General Electric bulbs that might be used in the kinetoscope. Other experiments involve the use a corrugated aluminum screen, reflectors, and various lens systems. In addition, there are experiments to make the telephone receiver in the kinetophone less bulky and better able to fit into a limited space. A series of entries toward the end of the book describes tests of a frictional microphone for train dispatching. Miller Reese Hutchison directed some of this work, and Briggs produced weekly reports for him. The results of some of the experiments were shown directly to Edison, who commented on them and sometimes gave additional instructions. The notes indicate that Briggs consulted or received instructions and assistance from Ernest J. Berggren, Adolph F. Gall, Zachariah P. Halpin, L. E. Hammond, Absalom M. Kennedy, William H. Meadowcroft, Henry J. S. Rudolf, and Carl H. Wilson. The cover is labeled "Experiments with Lights, and Lenses in Home Kinetoscopes. Also Aluminum Screens. L.E. Briggs I March 18 to May 21, 1913." The book contains 13 numbered pages followed by approximately 95 unnumbered pages.

L. E. Briggs
Thomas a Edison
Laboratory
Orange 907 - #11 Arme Ca: MEG. STATIONERS, 96 JOHN ST 19 PLATT ST. Book No1. March 18, 19/3 to May 21, 13

Silver Solution for Coating Glass etc. Washing Solution: 16 grams stannous chloride 1000 c.c. distilled water The washing solution cleans and prepares the surface to take the silver coating. Silver Solution: 12 grams silver sutrate 1000 c.c. distilled water add strong animone; at first, solution turns muddy; add more slowly until solution turns straw color allow to stand 24 hours

and filter.

Reducing Solution. 5 C.C. Formic aldehyde 40 250 C.C. Dustilled water. Four the reducing solution" 3 wito the Silver solution 2 and dip the glass to be plated into mosture as soon as possible.

Tues. March 18.

To adapt incondercent lamp to Home Projecting Kinetoscope:

AM. Top film neel clid not wind up so I neadjusted.

Concentrated planears lamps net near the forum of B conductor less.

Series 15 ft distant less.

Series 15 ft distant

Seven 10 ft distant till par Image little butter but still par

Tues. March 18 Ordered silvering solution for silvering incandescent lamps bulbed, Soldered lead connections etc and connected up. 30 C.P. Mayla Lamb. Concentrated flament Battery of 5 Horage Cells.

Incandescent lighting for Home P.K. B System lenses Above distance between focus and leve barrel Wed ch 19

#2909 Thiors. March 20'13 Incandescent lighting Home P.K. Machine Finished the adjustable holder for 30 CP. lamp. tal base attached Tried film "Poney Express"
5 creen 15 feet dictant 30 C.P. Concentrated flament Mayda kurp. Beture fairly good. Tried film "Mike's Hero" Picture good - faces pretty good. The lamp used was plan - silvered and used without reflector.

Thurs March 20,13 cont'd Silvering solution as first mixed had too much ammonia, Solution was perfectly clear and colorless. Tried a few experiments with small quanties in test tubes to get that straw color. The silver intrate solution worked best when it had the color of a lab coat More silver intrate Ag No3 was added to first solution

#2909

Fri. March 21, 13

Small tests to determine amount of Formic Aldehyde to other Nitrate solution.

Prop	Forme	Aq NO =	
Prof.	4	AgNO3	very dark
1/2-1	. 8	16	٧,,
3/4-1.	9	12	"
1-1 -	10	10	4
1/2-1	15	. 10	tt
2-1	16	8	ч.
· 2/2-1	15	4	no batter
3-1	15	5	• • •
3/2-1	14	4	**
4-1	16	4	little better
. 5-1	20	4	6, 6,

Results of above experiments are very poor. The Formic aldehyde seems to be very weak #2909 Fri March 21, 13 Different proportions of Formic aldehyde was added to biller kitrate. Strengths of formic aldehyde 3 cc with 120 cc distilled water add (1) to equal quanty of Ag No. silver coating was foor. 1 to 50 solution of formic aldehyde add a double quanty of solution (2) Result: a heavy coating of metalic silver was deposited on the glass bulb within 10 minutes, but the silver coating began to check and crack almost Mr. Gall realts of plating were negative. inregard to having General Cleature alver the lamp bulbs.

#2909.

Sat. March 22,13

Mr. Gall was not in this morning.

I showed (Mikin Hero) faictures to Mr. Hutchison and he said they were "dawn good". He called Mr. Edwon who was pleased with the

facture and requested us to test the lawfor for endurance. Mr. Hitchison also had

Mr. Berggren and Mr. Wilson in to see the pictures. Both thought results were good.

Mr. Hutchison wants me to make an adjustable holder for him.

Make test runs to determine the life of the lamps.

Measure the current used by lamp.

Go to General Chetric Works, Harrison to get 12 - 30 CP. 6-V laufe railward.

Sat March 22, 13. In the afternoon I started to make adjustable holder for the incandescent lamps as requested by Mr. Hutchison. lamps as requested by Mh Hutchison.

Stopped work on holder morder

to try the incandescent lamps on

day light fucture experiment which Malpin

is working on. Futures looked

nory good upsteins in the laboratory

but when those taken out in the yard, the pictures were very dim.

#2909

Mow. March 24, 13.

Took 1.46 AM train at Bruch Church to Newark Round trip 15K Trolley Newark to Harrison, General Cleature Collison Samph works. Round trip 10K Return to Set. 11.58 years and d. C. Forter were not at the works, but Mr. Sommers attended to my order.

The 30 C.P., 6V-5 comps: 2/1/2 distributed and 50 C.P., 6V-10 and 3 3/2 distributed with lamps are not yet on the market; consequently not suffly of these damps are hight maters and all orders are made specially to order

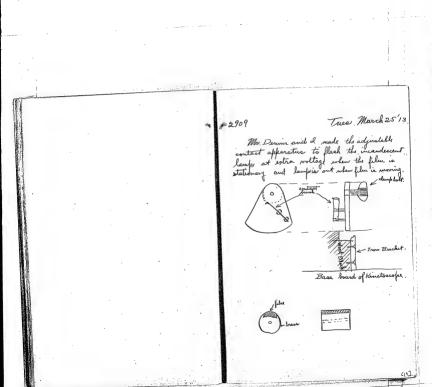
Their best promise was trueline 30 C.P. lamps - silvered one half wortically to be shipped by express next moloday Merch 31, 13.

Mr. Sommers claimed that tests had demonstrated that the life of silvered bulbs was adortened

e e e

Mon March 24, 13 #2909 "Parabolic reflector 1 18" focal leigth. 10 amp. Mazda concentrated. 3 3/4" dia of bulb.

Mon. March 24, 13 #2909 Hutchison advised me to order by telephone 12 - 50 C.T. 6V - 10 Amp.
Mayda concentrated helix filament
info. 1/2 Bulb to be silvered partically. got Mr. Barus at G. Works, telephone Harrison 2/82. Mr. Hutchism introduced Mr. Dennis as a machinist who would help me make adjustable commutator. is accontact device made to flack the incandescent lamps at a high voltage while the film is stationary and then contact connection in brokent while the film is moving .



Wed. March 26, 13 Set up Kinetoscope and measured voltage and amperes at lamp. 6 storage allo gane 8.2 volto acroso their terminals. after current passed through commutator, the voltage across lamps was 5.7 volto, and 5,3 cmp. 8 storage cells readings at lamp. 7.3 volta normal voltage of lamp 6 volto. Commutator adjusted to cut out the current 1/4 of the time. Current flows Good motion pictures 15 feet distance B system lenses.

Wed March 26, 13. · Commutation action: -By actual measurement, the motion of the film required to make one complete change of future occurred while the fly wheel turned though 1/2 of a revolution - the film remains stationary during remainding 1/2 of the revolution. Hence if the electric corrent is broken only of the time to cool off. The commutator was made with 1/4 of its circumposence of fibre - the

The commutators is fastened on the flywfeel shaft which makes one revolution

while the film is moving, the incondescent lamp will burn at a very interne heat 1/2 of enter time - thus allowing only about

making it possible to cool the lamp filemen during 1/4 of entire time. By one of a double brock arrangement, this time internal and amount desirable - the best may even be topt browning without any passes.

#2909

Wed. March 26, 13.

Experiment in small dark room.
C dystem linese.
30 c.T lump K silvered virtically
9 storage selles 8.3 Vette - 6.3 lamp
Good picture 36"x 48"
Mr. Elson thought it good,

Experiment continued in Committee Room 9 storage cells same as before. B bystem lines

B System lenses Josef picture 5.4" × 72" (full size facreen)

attempt to cover large screen

C Systim lenser. Lamp bevent out - flament did not break but filament lead melted.

Mr. Hitchison authorized an order to have J. E. Co make two large lamps of concentrated below try has. There will be need to experiment with meandescent lighting of the large Kinetisocope.

Thurs. March 27,13

Submitted the weekly report to Mr. Hutchison.

New improvements in the lamp, better commutator are started worder to him the complete appearatus in fine working order for demanstrations when the near lamps arrange.

Called Mr. C. G. Forter of the G. E. Sarp Works at Havinson, on the telephone, integral to special lamps of high candlephoner to be trud in the large trinstructural pulse, type are not needle in area greater than 50 C.F. because a risk carrying more than 10 augure can not be properly sealed in glass.

Mr. Forter says that their total should the silver cooting on the bulk measured the content on the bulk while the life was abolded by the reflected rays being assorbed by the planner.

Thurs Merch 27,13. Mr. Porter said that the G. E. Co. is making some special lamper of very high concentration for us. He thought the the first experimental lamp; with a long bulb - but bot a large dia. was finished and tested. Mr. peleson of the experimental defit could not be found but Mr. Porter promised to give our order his special attention and to rush as much as possible

Friday March 28,13 Made a new lampsocket and holder. Startet on changes in commute

Sat . March 29, 13. Complete apparatus is ready for demonstration with the new lamps.

#2909

Mon March 31, 13.

Home P.K. trials on the large says

C system lenses

30 67 concentrated belix lamp.

Mot scheened during 1/4 of time.

Protts (mound is to rolls)

Very large picture on commercial says

screen was down but pictures

on aluminium screen was good.

Mr. Gall sear pictures on both screene.

Mr. Mr. Cracken of General Electric Worker telephoned the earliest diffing Later.

30 CF. 6V-50mp - 12 lumps april 5

Tues. april 1'13. 2909 Educiments with the Nernet lamp in the Horne Kinetoscope; The two incandescent bars are two separate light sources. The do not come to the same focus on the screen. as result the mage is not sharp. If the light source is a point, all the light range come to the same focus and the image washarps. If all light range quest those from one point are cut off by means of an aperture, the may on the screen become

Wed. april 2, 13.

Experiments with the Normst lamp in the Home Kinetoscope.

Experiments were tried with an absentine about 1/8" dia infront of one o the incandescent bars of a Nernat lamp When the aperture was used, the moun pictures appeared to be in sharper focus than when the picture was illuminated from both of the incandescent bars. a new aperture plate, the design o which could be used in commercial man was started.

Question: doa picture produced by light rays, each ray in a definite direction, projected through the film, or do the light rays through the film strike the film which then becomes a light source due to the diffusion of the infringing light rays? This can be suttled by varying the distance between the light romand the

continuer lend. If the sharpness of the picture is not disturbed thereby, the picture

is due to diffused light.

Thurs. april 3,13 I shent most of today charging titles in the Scenario "Magnetical." This scenario was corrected by Mr.
This scenario was corrected by Mr.
We west over the suggested
clauges and now of have the scenario
ready to submit to Mr. Educor. The afecture for the normal lamp was functed but not early enough to permit extended trulo.

+2909

Fri . april 4,13.

Exposiment: effect of an aparture 1/2" dia in front of a Herust lamp.

Two Home Kinetoscopes lighted with Nemest lamper were west aimultaneously to give a clear comparison.

Two films "Mike's Hero" was used. One Ninetoscope had a Nermet lamp without any obstruction between it and the condiners lense; The other machine, specify the same as the first, had the aftertury forbias directly import of the lamp, thus allowing the light from a well part of only one meandescent have to reach the condenser lens.

The faictiness through upon the screen, side by side, "about 24 inches long, were easily compared.

The ficture from the machine using the aperture was the better

#2909

Frie, april 4,13.

The use of the appetione gives the picture the appearance of such greater depth and charper focus.

Picture lighted by the regular Hermatlamps was very power when compared to the picture lighted by the Hernstlamp with an apenture.

Mr. Hutchison and Mr. Gall saw the fairtures and both and that pictures from the machine many the aperture were new much better. Neither knew how the lamps were connected up with after they had expressed their opinions.

Sat. april 5, 13. Submitted Sunario "Magnetism", revised as per corrections by Mr. Meadowcroft, and a typewritten suggestion for Ed. File Title Slides to Mr. Authison. Tried to readjust the coffee brushes our the Home Kinetoscope. The coffer breaker rulbing on the coffer communitator are giving troubly.

Carbon breaked may be necessary to eliminate the trouble.

#2909 Made a new brush holder for H.P.K The new earbon brushes work I Called Mr. Mc. Cracken of the J. E. Co. at Harrison. The said the 50 CF. and 30 CF. lamps could not be shipped april 5, 27 as promised but the 30 CT. lamps will sively be shipped on the 8th. and the 50 cP. lamps on the 10th.

Tuesday april 8 Made a special attackment to the are light mechanism to try a diaphraga between the are and the condenser. The diaphragin was 18" dia and was supported about 18" to 1/2" may from the are words to except the enterely heat. The experiment sloved, however, that the distingue was too far any from the one either the disphagen must be closer to the are or the displingen must be lorger. This experiment was interrupted for the present inorder to test the new incandescent lamps which are expected tomorrow

Wed. april 9, 13. #2909 Home Kinetoscope was connected with electric dring: V grove and driven directly by belt from an Emerson 1-20 to conotor a small variable resistance in series with the about field permits the adjustment of the motor speed. The complete outfit, kinetoscope, motor, resistance, doubte throw switch and wire connections for both the motor and the incandescent lamp are mounted upon one best lovered. The complete of peretus runs well and endurance runs will be made with the new incondescent laufps.

4:00 PM a a little dirty! is doubtful - should be discarded storage cells. good 9.9 3,8 4:00 4:30 3.7 5:00 4.2 5:30

#2909 Volto at Battery Amperes 4.8 4.7 9.3 8:00 4.3 8:30 4.2 7565 9:00. 4.2 9:30 10:00 (0:30 to 1/2"dia.

9:00 5.6 Helix 5.6 5.6 5.7 5.7 8.9 8.9 8.7 8.7 3:00 5.34 4.00

M	7.	*						. (
						.,12				
				12	\$2909		0	Mon	Hight of	w. 14,13
		•		4		Helix is	Lamp #	- silver	i.t.	
				\	11		voltage	conta	durly.	J- 5 cell
					PM	folto at	rough	4 mpers	Pictur	
					8,20	6.1		5.8	good	24 x 36
					9.00	5.9		5.7		f
					9.30	6.0		5.7		
				-	10:30	6.0		5.7		
					10,30		,	5.7		1
					wight.	2 hours	30 1	10:30PM	to True 8	~) ::00 AM
					mpm.	1 L	1 × 7 2	ntel	Twee.	
				1.1	8,00 AN	5.8	5 cella	5.7	0	
					10,00 "	6,0		5.7	Recitance	mal voltage
					11.00	6.0		5.8	hatremela	to off one les
					12:00	6,1		5.7		
		**			5.00	6.0		57		
						٠.	downi	Tanàn	lau .	
	-			* * * * * * * * * * * * * * * * * * * *		9 hours	المسيسة مرا	1	1	
						19 00		(no in	-	7
. da			11.			20 hrs	70 mm	L 500	PH & WE	8AM.
					night _	15 hrs	0 "		1	
						35 hos.	40 min	Total		
						100	THE REAL PROPERTY.		1 .	~

Wed April 16 5.6 5.7 5.6 5.6 5.6 5.6 6.1 5,30 30 mm 40 "

april 17, 13. Amperes 5.7 ethod of taking 5.7 5.6 Mr. Sofutchison, Mr. Gall, Mr. Wilson hers saw the factures in the 50 C.P. -- 6 Volt 10,5 amp lan

£ 2909

april 18 13

Home Kinetoscofes was set up in the Committee room. Sucandescent lamp connected to 6 - 4-6 storage cells in series with an adjustable resistance.



Voltage was adjusted to 6,5 volta;

30 cit * Eamp, selvered /2 vertically was tried first.

E G 30 CP lamp, plain bulb was next

Plain bilbs gave better result than bulbs silvered 1/2 vertically

50 C.P. was little bitter than the 30 C.P. but 50 C.P. lad a little rolon rime because large bill hept flament anny

Fri. april 18,13 ndenser, the light spot not C'E GLE De Phonographes Cinematographle Apparella Da Praision 12 Ama an Cofital de Fat 15,000,000 98 Rue de Richelien-Paris Breveti S.C.D.C.

Extra White Cluminum GH. German - american Bronze Powder Mg Co 80 Warren It NY.

\$2909 Sat. Cepiel 19,13.

Wer Hutchison has returned from a still him of the results from a plandfully compared with that from a plandfully compared with that from silvered & hulls. He was too bury to pee the fauthers but he total was to the a machine and equipment to the G. E. a inorder to have furthernities testo made.

Measurements taken of the lens system and reflector on the French Above machine together with a few achievement remained the intersting facts that a Atthibition the machine was placed in a position such that the times proceed in a position such that the times were a proceed in a position such that the times was placed in a position such that the times was a proceed to the times the proceed of the times of

· Took the 8 o'clock train for Newark and trolly to Harrison. Mr. Porter lad a committee meeting in the morning. Mr. Muller showed me in the surring, Mr. Muller should me through the lamp works and the lamp tests were made in the afternoon. Mr. D. C. Porter Mr. Sommers and concluded the photometric tests and fourthed at 5 TM, we

Mr. Gall sear we staturday about making appartments with alminim screens from the blome FN. a conseguted cloth is to be tried worder to increase the angle of new.

Mr. Edward wants Gell to try a spherical reflector with the are lifty in large Kinetiosepher Quarty in suggested with bust material. I suggested with bust material.

An apartire pode is placed infras of the are in the Home FK. of wants to try this spheriment incorder to try this spheriment incorder to see found to be the sease when an apartme was found to be the sease when an apartme was land defort the Nernat Lamp.

Tues. april 22, 13.

2909

Wed . April 23,13,

H.T.N. Screens - Corrugated cloth,

Cluminum carriers:

Water Proof Llope (Jemison)

Gamif-Cashta for thinning.

Berium Sulphate & Galatine,

Grind to fine provider

Cet a little Chrom alun just before use

White glue & water.

4. June white, white glue & water

White lead, turpenties

affly with brush.

Polick with silicate of magnesia.

14th #12909.

Thura Copr. 24,13

30 C.P. Concentrated Relix

6.0 Volta - 5.5 amperes, 6.5 1. 5.7 11

50 C.P. concentrated helip

6,0 Volta. 10,7 anfures. 6,5 Volta. 11,2 anfures.

Afaneture 36" die hout of arc light in H. F.K. did not improbe the pictures. Two machines were texted ride by side?

with vertical corrugations has a mide "angle" but the illumination in hour color to incorred. The illumination is a little them because day light can diffuse through it in places.

CNJ

Fri . april 25,13. native of the any was here to study the Home P. K. Halfm and I gave an adulation with both the meandescent lamp and the arc light in Remarks room. Afterwards, we what to the film plant words to show some largefilms Saturday. at Westerly R.S.

#2909

Mon 28,13

Mr. Antelision wanted a new 30ch lauf Sunday but conted it find it the advised me to order 2 dog new laufa, name leaver coffee bade and larger bulls

I talked with Mr. Bettchner and he said he would use a home beed and 9 25 hills. He requested that I send he would not a home head and 3 laufer and a letter was suit thin afternoon.

Mr. Hutchson alled the Cutter-famour Transformer people on the talkfam, and their representating came up late in the afternoon.

d. started to put aluminium power on now parents with variable.

Tues. april 29,13. Haintel Varnished the corrugated aluminium screen. While the varush was atill atily aluminum power was sprubled topowit and then it was gone over with a felt covered roller. This screen gave very good results at a trial in the committee MODULY. Mr. Marshell, production clerk has made the aluminum Screens.

Wed. april 30,13. Lamps tested at G. C. Works: 30 c.P. Flain bulb. Felament good shape - bulb clear. 30 C.P. Silvered.
Thamen't shape OK but not central dunge displaced 1/2 dia of helix to the right. Lamp #3. 50 CF plain bulb filement helix is tiffeed about 15° with both the vertical and horizontal axis. Bull clear - H. of broken off both leads. 50 CF. Silvered bulb. Image of filament is directly above the filament helix. Felament is a better helip then the filament of lamp # 3. H. of broken from both bedde

Wed. april 30,13. 1 #2909 most of today was short on writing reports and collectation. Mr. Hutchion requested me to find what a Shape Miller Photometer costs, I called up the Musch to Cleatrical Supply Co and they promised to look it up. Mr. Edwar approve the order of a Sharpe- Willer Thotometer - May 9, 13!

Thurs. May 1, 13. #2909 Back Focus A Motion Proture A. stereoptican Motion Picture B Stereofitican C Motion Protune c Stereofitican C Condenser Mr. Galf saw the corrugated screen today. He thought it good, and advaduach one to experiment with different moterials, for the screen. I ordered I found of alum Received some from Reis May 6, Fri May 2, 13.

#2909 Fri May 2,13,
"Angle" of 3 objective less. $tan C = \frac{16}{720} = .1333$ 2 angle $C = 15^{\circ}-12$ $tan B = \frac{12}{120} = .1000$ 2 angle $B = 10^{\circ}-26$ $tan A = \frac{8}{120} = .0666$ 2 angle $A = 7^{\circ}38^{\circ}$

Sat. May 4, 13. a reflector and a suitable suffer the reflector and The necessary specifications for such a mounting with the required adjustments is I covered by the

#2909 Mon . May 5, 13. Spent the afternoon in N.Y.C. as Unable to find a opherical hirror Places which I visited. Bausch & Lomb Oftical Co. 200 - 5th av. n.yc, E.B. Meyrowthy
125 W 42d Street. €. B. Meyrounty 237 5th aug. E. B. Meyouty 170 Bway. Herbert & Huergen ... The only reflective they carried parts of instruments.

Mon. May 5, 13. #2909 Experiments with lens systems: objective. THE Since A condenser has a of light is ficture which is not Illuminated as well as the future in test I. a small difference sould be detected with the eye, but a photometer should be used morders to get complete and definite data

,013 \$ 2909 Ordered this morning from Bausel & Lomb afficel Co. Rochester (N.Y. One (1) Spherical Murror & Reflecter. Curvature 2" radius (having a well have a sliding fit in which we shall make, PLEASE RUSH.

909 Tues May 6,13.

Called Mr. Bettehner at

G. E. Harrison 2,82

Ak promised to push the order
as repudly as possible.

Tres. May 6, 13 Received today from Mr. Holland. One Western Clectric Company 228 W # 3363

Webb. Murghood Philadelphia used with Thinograph Records.

Mr. Gall says the is good.

Frictional Microphone for Train of infeatibility of GAM.

Received from Mr. Holland. one Am. Bell Tel. Co Suduction coil.

٧.,

cui:

Wed . May 7,13 , Athiner cafe for the telephone receiver is being made because hard rubber one is too bulley to in the limited space

Thurs May 8, 13 Visit to G. E. Langs Works. Mr. L. C. Forter Selluminating Engineering Mr. Burnell ales slept. Jackson Chermontal Slept. Mr. Bettcher Engineering Slept.

Thurs May 8, 18. 3363 Mr. Porter recommended the Sharpe-Millar as the only photometer Photometer to be considered seriously. The Foots Pierson & 160 Iluane St UYC. Tel Worthe 1520 Cory this instrument in stock The Western Clectric Company also advises that O. T. Low. handle the entire line of scientilia instrumento. Mr. Porter sam that our 30 CF. 6 V 6A are called Concentral - not Concentrated He

Thurs. May 8,13 Mr. Jackson Ch. Engr of Experimental Llept. promises lamp of high concentration very a very efficient lamp Concentration within a cylinder 5"dia and 15" length. 1000 hours life 250 Candle Fower. He expects to bring over 50 complete lamps room.

Fri . May 9, 13. 17363 saw Mr. Hutchison this receptables, and also about the Train despatcher experiments the telephone with now Jackson. Mr. Authison wants a 1 40 a 50 volt lamps insudiately. He also requested that we have one of the 110 volt lamps inorder to test it in the Home P.K. Mr. Hutchison dictated a long and comprehenous letter to Mr Bur head of G. E. Lamp works, unggered to our ungent need of incandescent lamp for large commercial and also Home F.K motion picture wachines . E 3363. Tri. May 9,13. Test of Frictional Microphone ain Llispatching; Words from how lack volume. anduction evil was added but with little inprovement another tray of 6 alls was added in series with the first tray: a little increase of volume obtained but the results were not

Sat. May 10, 13. # 3363 Mr. Holland invited me his loud speaking receiver up in the Electrical dept. This outlit does not use the induction coil but it is fairly loud and distinct Mr Holland and Mr. Hutchison was our Mr. House's and the

#2909

Mon. May 14/3.

Photometer.

Connected up the transformer to 6 V. 30 CF. lamp. 110 V but our line voltage is over 120. 120 Volt scale from Hutch's office but voltmeter is not large enough But addone P.K. Resistance Co in series and the voltage dropped

Mr. Gall called Farrel of the morden to borrow voltmeter.

85 Volto

C\$ #2909 There. May 13, 13
Wer. Marolel who has made

Alle Marshall war has made af this morning of wanted to get the arise of series made and the middle of rolls used.

27"x 36" server 58"roll.

40/2×54 60" rolf 54×72 60" roll.

Marshall says he has about

#2909 Tues . May 13, 13. Citler-Hammer 110 volt primary transformer and 6 volt Line voltage 110 - 60 cycle. When the formary is country the line the 25 ampere fuses blow. second transformer was voltage was thereby and the 38 volta. Even at reduced to this voltage at the primary send transformer becomes dangerou Mr. Gall told me to call Mr dates, Cutter-Hammer - Courtland 8445 Mr. Slate was I not they but Mr. Montgomery promised to he Medlate see Mr. Gall.

3363. Wed. Hay 14, 13. been made and about 300 . in stock: Width Roll. 27"x36" 60" 40/2"x54" 60" 54"×72 14 different manufacturers of cloth or instation leather were requested by letter to submit prices and samples goods which had a vertical rifle or dorugation similar to an inclosed sample from bes. none of the manufacturers who reflied could furnish matterial in rolls 60" wide but many could as us with widths up to 54".

Wed. May 14, 13. £ #3363 40 " Mr. Gall has a new B condenser from Bausch & Loub This is a special lens made from better glass. Mr. Gall wants in to test this lens land to compare it with the old B. condenser. Telfaire gave me the loudtalking transmitter and receiver this afternoon as first set up - western trans mitter with loud sounding receiver, a rattling sound was heard! This was due to the greting of pertulo in the Carbon transmitter. a special transmitter did not have this sound but the sounds lacked volume.

Thurs May 15, 13. ₹33.63. Sent in weekly report. a new transmitter was tested this morning. The first tests were ailures because the receiver was hot properly polarized with the line and the receiver became demagnitized. after the receiver way remo Mr. Holland decided to try anoth transmitter because this experiment seems to be a problem in receiving and transmitters. Often the proper transmitter and received are found the matter of a good friction device is Mr. pfutchion sent up mr. Jackson letter in regard to 110 volt experimental with the 110 volt lamp and the other

Thursday May 15 Since the condenser lens is only 3/2 miles above the lamphaire floor , and since the new Howeld lamp in 4/2 from beauto to filament it was nelessary to cut a hole through the lamp home floor and also through the sliding board. This was sufficient to bring the filament at the center of the condenser and also enough to allow a alget vertical adjustment. The hole is not large enough to allow longoutel adjustment for A and B rystem densel but this ball can be enlarged latter. ... Mr. sputchison advised me by memo that a representative from the G. E. company would call toms Swith the Sharpe Miller Photometer.

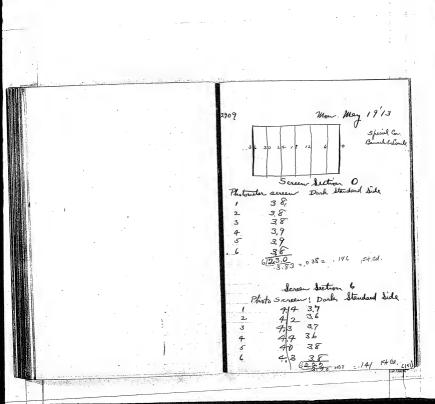
Fri. May 16, 13. connected up the two machines in the she room, third flood back, laboratory and adjustable resorted was the in series with the morden to reduce the voltage from 125 to 110 which is voltage for the new lamps. our tests and he remained until moon. a c system lens system and the fucture " was the file some very dark scenes in it especially where the victim leave the diving room after he is totared by the right & small of his friends

Fri . May 16, 13 Mr. Edison, both from the machine using the 6 volt tamps and again father the machine using the 110 world lamps. The machine was then carried to the back of the woo until a very large plature thrown whom the screen, using the C system Censes, Mr. Edwar was greatly pleased with the results and he said. give the brunes of the G. E. Co. and they would have to buy kis storage Watteries. 1 mr. Edison was particularly pleased because of the prospects with the are light.

Mr. Summers of G. E. Co, Illuminating Engineering Left the explained the method of using this instrument and gave me the proper constants results, the instrument should be be regalibrated whenever a cha Standard lamps is made. 242 Mil amps should be out through the standard lamp

Sat. May 17, 13, Mr. Holland is working a new transmitter. The last one had good volume but the thubich Her. Holland hofes to correct the above defect, will be ready monday, Set up the sharpe Willer Photometer winder to try it out.

Mon May 19,13 Test of New B" Condenser from Banach and Lomb. Photometer at center of factures Commercial B condenses 3,3 3,2 3.0 3,2 Special B



Mon. May 19, 13 2909 Screen Section 12. 3.8 3.8 3,7 3.9 Screen Section 18 Photo-terear Dark - Standard Side . 3.8 3.8 3.7 4.0

Monday May 19, 13 2909 Screen Section 2.7 4.0 3.6 3,6 3.5 Screen Section 30 Phots screen Dark Standard 3,6 36 3.7 3,5 3,6 3.7

#2909 Screen Section 36 oto Screen Dark Standard. 3.7 3,6

Mon. May 19, 13. Stock B. Condenser Photo foren Dark Standard 3,5 33 3,3 32 33 61209 ,050 = 132 Ptcd. Screen Section 6 Photo screen Dark standard 3.5 3,5 3.5 3.5 3,5

Mon . May 19, 13. ¥2909 Screen Section 12 Dark Standard . Photo Screen 3,5 34 3,5 3,4 35 3,4 Screen Section 18 Photo Screen Dark Standard 3.3 34 3,3 39

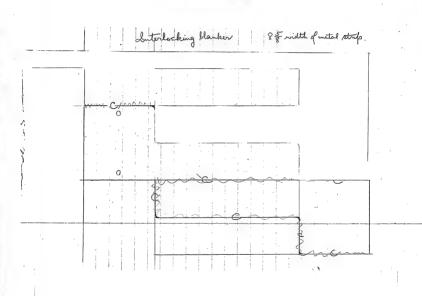
= #2909 Mon. May 19, 13. Screen Section 24 Llark standard 3.4 .3,3 3.4 3,3 Screen Section 30 Photo screen blank Standard. 3,5 3,3 3,3 34 3.95

Mon May 19,13 2909 Screen Section 36 ven Dark Standard 3.8 6/13.07 ×038 = 1/20 Ft ed. Two machine equipped with archarge more set up bade lif note in the committee room and the fiction thought the person are of equal size and kept in square Test for Rudolf. see blown with magnet dutinaity of light reflected whith cardboard - unglas 54" distant from screen Photo screen With magnet 510

276 With opherical Reflection Without. Reflecter. with reflecter in back . unthreflecter. bamp lawf and the other with 110 volt 6 volt lamps. 110 volt lamb Submitted report on new B'condenser made by Bausch & Loub. Ordered necessary parts and started to assembly.

Wed. May 21, 1913 141 2901 5106 F+ Carolle 36 an order of 200. There compared with the people submitted. 6 Bed. "B" condensers were all on sauple. he treport May 21, 13 on the experiments with Frictional Thurs. May 22 x 3. See New Books No 2.

[ITEM(S) FOUND IN BOOK]



Notebook Series -- Notebooks by Experimenters Other Than Edison Kinetophone and Kinetoscope Experiments -- L. E. Briggs Books Notebook. N-13-09-17

This notebook was used by Leroy E. Briggs during September 1913January 1914 for experimental notes on an automaticfilm developing machine.
The book consists primarily of a daily account of Briggs's activities, including
experiments with new or improved parts made for the machine. There are
occasional references to work on the home projecting kinetoscope and to the
'other book' (N-13-05-22 Inot selected)). The notes indicate that Briggs's work
on the developing machine was overseen by Edison and Miller Reses
Hutchison. There are occasional notations regarding Edison's opinions or
suggestions. The notes also indicate that William W. Dinwiddle, Absalom M.
Kennedy, Charlas W. Luft and James W. Ramsay were involved in similar
work. The front cover is labeled "Automatic Machine for Developing, Fixing
and Drying Motion Picture Film. L.E. Briggs. SO. 3300." The pages are
irregulatry numbered. Approximately 75 pages have been used.

Meg. Stationers,
95 John ST.
AND
19 PLATT ST.
NEW YORK.

LEBriggs Thomas a Edison

Laboratory, Orange M.

Motion Pictury Film Developing Machine 5.0. #3300.

3300

Wed. Sept 17, 13 -

afternoon.

room.

been held up by wooden wedges. Hooks on something more permanent should be

Ordered the blower which is to replace the one dimending took away.

Mr. Luhr is making new sprockets of twomer metal is 12 mouel metal 24 breas to be visickeled

Thurs . Sept 18,13 Washed the reservoirs for developer, hyps, and glycerne, and got 13 rubber corbs glass Junnels and Twells. preces of 1/4 glass the developer etc are to lead Made wood brackets to bucket covices hold the also movel metal for buckets. erimented with bucker

3300

Put up 3 wood brackets, set morel metal tripes in broker positions and connected up cords. adjusted brakets

Fri Sept 19, 13.

Connected glass reservoirs with glass wells by means of glass by toochs and rubber tubing.

The small spray nogrels on the washer are stopped up and the washer are a whole is too crowded. The water splanter over the steel driving chains and on the floor.

Ordered 6 ft of 1/4 rubber tubing and 3 red breandescent talups started to alter the wesher.

I saw dlinwiddie this ing and I brought down the cooling tank for developer tank circulating dhap a persene mers thermostat

Monday Sept 22,13 Simpson. metal 30 regred & sheets of monel No 2 56 Februaria per Fat Brady telephoned to Biddle Hardward Co but they could not supply us with the had to take two sheets 32" x 96" . 021" thick which are promised in 3 days. Mr. Luhr brdered 72 steel collars and and 72 small set screws to be nicked plated at the Works I made a spetch of water jacket and another to Mr. Luhr.

Fan no 6297 A. Westinghouse Elec & mfg Co. Pittsburg. Fa. U.S. A. Direct Current motor Shunt Wou 110 volt 1/6 H.P. ,72 amp., 1600 P.F.M. Ino. So 466754 Serial no. 994401 no 6537

Sept. 22, 13 3300

Tues. Sept. 23, 13 8:30 AM Room Temperature 9:30 Blower for dayer Tower is too hot to run I stook off this blower and turned one to Mr. Kennedy to lave repaired. I find that all cham sprockets are love on the shafts. set serves are too small to hold. all these must be drilled out for a lerger set screw. I have decided to put the chains back of the hanger plantes and thereby keep them dry and away from water. Took down the supporting wood beams for sprochets shefts etc. Had Mi mudd saw places to allow cham to run on back ride

Tues. Sept. 23, 13 Told Mr. Mudd how I wanted the ventilation blower. Had Mr. Luhor make the pipe connection between the and the filter box. six slots on circumference. or air-ports the room to be drawn in the fam when the weather very cold. brass wood scre also to replace iron ones. a rod of drill-rod

Wed. Sept 24,13 3300 Changed the electric lightim circuito for ruby-lights white room lights, blower, etc morder that each may be turned on independent of each other. Got the slotted pipe connection between the ventilation Illower tend the filter-box Helped the Carpenter to put it on and I instructed the Carpenter how to make filter box · Kennedyje man cleaned up the blower And Lrying Tower bus Sheats Sp. 1 drill some 1/2 holes in the motor case as an aid to ventilation but the motor contin

Night - 7:30 - 12:30. Wed Sept. 24, 13 got the chain-sprochets from Mr. dufor, and also necessary screws that I would need. Cut drilbrod into correct lengths for shafts. Spotted positions of set screws on shafts flat spots for same. . Connected and set up shafts, orhets and chains on lower sprochets and chains drag Film dbying Tower. Same for langer for Washer, Chains mor run outside of washer and are no longer

Sodium Sulphite metal Afydrogumone Citric acid

3300 Ordered Perfection Paper fastener for connecting pieces of small spockets. Thurs. Night. Tried small film feeding motor is were connected as far as the washer, altered electric worning i

Fri, Supt 26, 13 3300 Cleaned and orled chains. Connected up all shafts with and started to change old insulest rolls for new specket rolls. Find electric light receptables to hold ruby lights with shades. Gave Mr. Lynen some bottler to hold developer which he will Received the paper fastener which is used to your puces of film. more motel came in today that Mr. Inhe wans he can hot make working gachet for several days

Sat 27, 13 3300 assist in locating the sprochet rolls for film.

. Mon. Sept. 29, 13 3300 these riolls and the driving Started to put tower blower in position but hed to return to Lubr because the mechinists had not put it together as Started to set up the Cooling water reservoir Gave it a trismith to have position of overflow changed. Tensenth is making my washer

Tues. Sept 30, 1913 3300 Put up blower for Film Duying Tower. It have very good now. Fixed pulse connections for water plely. One raine supply represent abother value is for general supply to cooling water reservoir its. Gain Mr. Much a statch for a stand to suffer the cooling water jacket will First wring with reservoir in position on this stand Connected up small unitor to run the sinculating pump which meintains a constant difference of head in the reservoir. Experimented with the Kerosene - oil Murcung Thermostat morder that of sould agent the light of mering at center of table for 65°. Put up a new tray ste on the

3300 temperature 65°. The electric circuit made in the perosene oil mercur thormostat. got the developing tray with Thurs. Oct 2, 13.

Fri. Oct. 3, 1913 3300 Calibrated the solution Painted the Washer Chamber. water affareture Had to elevate legge tank worder to moreone hydrostatic head to be taken down and repaired time because down Had a cover made

Set. Oct. 4, 1913 3300 a M.P. Camera, film - all Tred lights When developed, the

Mon Oct 6, 1913 3300 Finished alteration Washer chamber. metal work is Data and Resulta of a preliminary test of machine - reservoirs, well and trays were filled with water instead of their respective solution mon. Oct 6,13 3PM 74°F Outside Temperature 76°F Room Temperature 55° F ar temp of cooling water into 70 .F water temp - devel, Ter 550 larsing the I'm block of vie the

Mosse Oct 6, 13: 55.8 53.8 51.5 500 51.4 1.022 ft per 61,32 ft per 1472. Ht

developer supply: 2500 €€ 38 buckets during this interval. 250 = 19.74 cc per bucket. 1276 cc per hr. 0:337 gellow for her.

480 graping Meryou avoirdupois weg 3ll og Sulphite Soda \$ 0.563 ll 9g Carbonate Soda 437.5 grains = 1 ounge metol All 1184.95 16 03 or 7000 grains = Brounde Potas 1350 .634 .48 116 " 033 Citric acid 4 quartz = 231 cm in = 1 gallon U.S. Potas metabroulflute 1 lb 063 1 gallon U.S = 3.785-44 liters \$ 1.373 1 liter = , 2642 gallons U.S. cost per gallon \$ 0.137 Cost of developer par 1000 feet film developed \$ 0.753 one fluid ownje is 128 part of 1 4. sgallon Hypo Solution. 128 fluid ourges = 1 gallon U.S. 2 lbs hypo in 1 gallons U.S. Hardener . 2 og þer gallow . " ., Harden Enether of Soda 2 og . Hypo costa about 3 & per lb.

Tries. Oct \$ 1913 test film showing still object. a group of mixellaneous objects were set up and photographed are lights in the Raboratory were used. a triel prece of film which when was then developed in the de of the HERfilm plant. a frice 4 feet long, which lad been exposed ned lights in my dark room . 45 minutes, was also develope at the Home P.K. Film Plant. entire 4 feet of this film came perfectly clear, showing the ruby lights were perfectly safe my ruby ly

Tues. Qct \$ 1913 3300 3300 Data readings taken at end of test - after 33 lest of negative developer tray Room temperature 70° F 56° F Cooling water " 38.875 1. Developer 68° F - 16.6 sec or 37.27 min 37 minutes 16.6 seconds between start of film entiring developer and end of film leaving developer. 4ft .22/2 inches of film always 37.27 in developer tray (during this test) amounts of solutions left in reservoire: thereloper res. 3150 Hypo d during most of this run. thoroughly. listed due to the hypor in the tray

ec

CC

Wed. Oct 9, 1913 3300 to get negative film mearly as possible under conditions of standard practice; telephon of Brown Studio to get his concert for permission that I be allowed to make an exposure with I met Mr. Pheiss, the Head Camera man Took 180 feet of two acense Returned to the Laboratory Wed developing etc. this negative.

friends of air at 73° is .82.

find himselfy of this air after
it is heated to 84° F.

Vaforpussine of with infor at 73° = 26.98 cm. in.

36.49 at 80° F.

23.33 at 70° F.

23.32 cm ty at 73° F.

Vyor preserve of water befor at 84° F = 42.31cm

52.57 at 80° F.

17.96

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Wed. Oct 8, 1913 3300 dlevelopment of negative which & took at the Broup Studio Wed. Oct 8, 1913 or " What does it No. 1582 profit a man 150 feet film. Readings at finish of developer Room temperature 74°F Room humidity (Dry 750 - West 710) 82 Cooling water temperature 56° F developer temperature 72° F Hundry out doors (dry 730 Wat 69) 82 1 Film Drying Tower 84°F Temperature Hermidity (dry 84° - wet 73°) Leigth of film. 5 ft 10 /2 enches in developer tra in Hypo tray

Wed . Oct 8 , 1913 33 00 159 minutes 55 seconda time interval required for to each individual exposure levelapor robution 3.602 min and in the Hypo colution Lost and of film left the developer ay at 12:07 AM. and or 104 minutes letter. between and rear end of develop tray bond the winding on film real.

Work on Home P.K. Lee other book.

3300 Friday Oct 10, 1913.

Work 1 + +

Set. Oct 11, 1913. 3300 I saw Javrel ferronally Jamison with me which I that nathed at the Browns and afterward developed in the The test was fruited 16.3. but it was decided to give the portue a little more time, A no 5. Un Jameson then gave n Chinol stock developer position - 1,2 lb hype to 4gelle water. To this & called 60 cc fraudliff.

Set Oct 11, 1913. 3300 first and of film entered developer This was repaired

3300 Returned to Leb at 7:30 PM. started film motor to test chein. The sheft which corries the last driving sprochet and also the large sprothet year ran badly out of true. Consequently the shain climbed off the sprichet year and the same chain Which broke before broke agen in a . Befaired the chain with two. Suggestion ! the shefts should be new fines and put in two new dia and the sprochets should be larger - about 4"dia Tested out again. Chair boke again. I find that the chains are attething. Consequently the chain becomes loose enough tot climb up upon the sprochet , Lenke subjecting the machine to great strain Will have Mr. Luhr make some adders to take up plack.

Mon. Oct 13, 13 2909

afternoon 3300

Wed Oct 15,13. 3300 Outside to Wed . Qct 15, 13 63 ×8° F Cooling water temps developer tempo. outside Humidity \$1° 57° 55° F room humidaty 63'- 57° 63°F 60 2:18:00 Barometer 29.94 2:33:45 21282 70' 59 66°F Cooling water tem 65 Filia in Developer 6 ft low 166 ft film ment through

3300

Thurs. Oct 16,13

At the start of this test the room-

The soom regulator for the room temperature is all the top water to heart the room, and the top water which was nearly at the night themselve was allowed to replace the real-temperature was puriously ward for cooling with in the packet,

The temperature readings at were never nearly representative of conditions then when the conditions at start are considered.

Outplaces temperature 68% =
"Hemisphing" 60".
"Room Tamperature. 70° =
Guiling water in Jackste 66° =
Wheelefter temperature 66° =
Ar. Temp in Tampeng Town 68° =
"Homelety" 60°

76.54

so a result the film made only four passes through the tower while (8) eight he T also because of some touble with the steam radiator, the lest in the funish of the text, days was bright and clear with beinly di , the film had plenty of time

Nov. 3, 13. Shunt -1800 R.PM -1/20 HP. 110 west to elevate cooling water to the higher head. eck Dynamo Emotor Co Belleville Vilta 110 amp. 0.8 15 RPM to wind up Direct Corrent OF Sturtevant Co. Boston Mass 110 valte 2 amp Fan Size B. 300 cuft. westinghouse Cle Co. Pittiborg Dercet Current Motor Shout wind; courted speed contra duty

16 HP 110 100 12 PM

Thurs Dec. 4, 13.

Mr. Edwar called Mr. Hutchison and of and wanted to know what had been done upon the automatic machine for durifying its motion fecture film the last posture which I had photographed at the Boons and the magnet of which had also been developed asked what capacity the machine had. I foot per my them augusted many them multiple uniter that to putting sing film approached rought on lack the had another trade on lack the had another film and that develope another film and then develope another film and them.

3300 Start 60 mistery

Dec. 15,13. #3300 Pointers from Bob Kent, Sunday eve For Ball Bearings: 1.5 Bretz G. N.Y. Cubum Ball Bearing & . Rochester , Ny Temperature Regulation: The Bristol Co Waterbury, Com Thiring Sustrument Co 447 north Fifth & Philadelphia Fa. 200 Fifth in Ny. C. C. J. Tagliabus Manufacturing Co. 18 to 88. 3 3 that Brokly Best to vary the temps of coils or of air? Leiman Bros 62 y John St W Connerville Co. Connersville. In. Wilking was on the g. tripe.

Dec. 15,13. Carbondala Machine Co Drill rod was 1/32 30 Church St. MyC. Proposed shafter to be about . 5 to 3 Mention Bob when writing to Henry Towners about passing air over Brime Chains ; James M. Llagge. Co Phil. State problem and ask if clodge she will work, mention Bob George & Sharps . Edison sow the machine made the following sug diereare capacity by speeding the film 10 times or making it 10ft per min. Hetch suggested 30 ft. Mulafor tray to be in one length. Muchine to run full length of building Unclessory to flower near exit of film, thus having the weakest develop

When the libe is tweeted moiden to long it not trays of different planes, the film is subject to question attention at the sedges and therefore is likely to stretch wavenly which may show up in projection as buckling.

The emulaion side must to the aprobat wells in less blocky to be sentitud their when sentement and is next to the touch because the relative motion petruen film and of melbest in year while the sentement of the must be proposed in the sentement of the must be thought to train mules thought to train mules thought to train

length of tank.

acting upon the film at start and finishing upon with strong developer.

Thoughts to be remembered:

Old species rolls should be fast

Mon. Llec. 15, 13.

all species rolls should be fort to shaft and shaft to turn lossly in Ball bernigs alesse from all ligation. Refully morning film, pushed below acting as with bulkets, will carry

Consultantile solution with it from the trays blence is it not best to have breakent solution near spit of film, strong solution interrug with lilm?

choosen to test different metals in colutions of hype and doubleper, I cut to come to study the following and put them in bottles of these solutions. Coffee

Monel Metal

Notes on Warners drying machine:

Eglet fasteners seem good. Zucher than chilpless paper fastener.

anall chain drives of "sprotecta, reform now of sprocked notes are all drivers, all supported from 6" channel, and contry



guiding idlers.

Warner was the commercial film special on it butter.

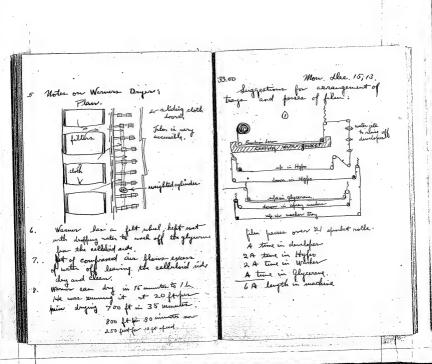
Warner were a worder cylinder weighted at the bottom of film lookes to act as take upon upon another enoughted.

Mone dec. 15, 13,

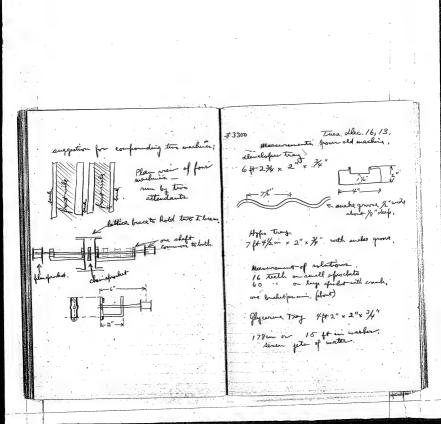
Biddle Hardware Co 160 Chambers St.

Temperature Regulator Thermortat am. Radiator Co., 140 W. 42d St NyC.

No.1 LHBH delivery Seriocco Por. Blomer \$6000 used for neutration and temperature regulation

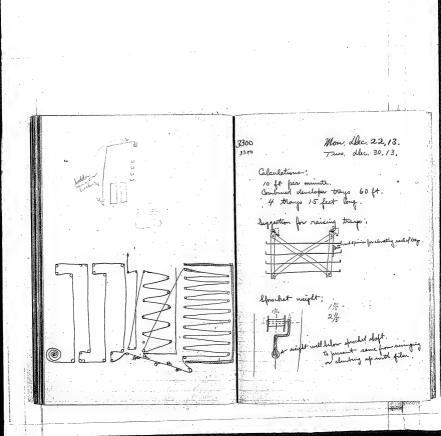


Mon. Llec. 16, 13. Solution trap to be so can be lowed for quick to machine ! film risers must be flowed for enough to one real to permit this side 21 Horochet rolls. motion of tray 7. 12 - 3 A length in developer Suggestion for a sprinkler to be used on underside of film. 2/2 A length in washer. 1/2 A length in glycereng OP roll to freitest abortioges 6 A length in machine.



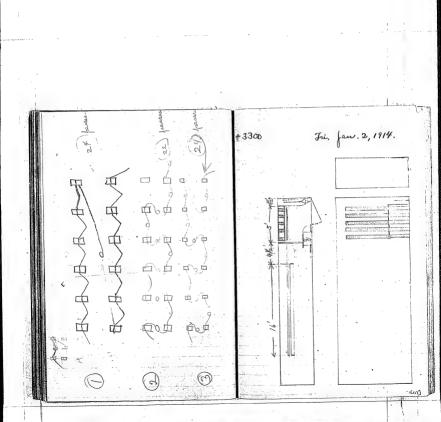
dudustrial distrument Co Foxboro, Mass. Recording Hygrometer lige 8" One Par of chart 24hrs. Evanel Case and mickel Platted Ring 88.00 -10% = #79.20 in oo chorte Botto who ite. Rouge between freezing a boiling fronte of water, 517" wide Dec 22.

Sat. Llec. 20, 13, 3300 Makers of Wooden Tanks. Q. J. Corcoran duc. Tank Manufactures fercey City, M.J.



3300 Wed, dec. 31, 13. section of developer Trays. 0.22 lbs.

7.48 gal = 1 cuft Wed. Lec. 31,13. 3300 . 1728 1.0.4 × 66 × 4 × 7.48 Water Tank בוווט .



Lat. Jan. 3, 1914.

Notebook Series -- Notebooks by Experimenters Other Than Edison Kinetophone and Kinetoscope Experiments -- A. M. Kennedy Books

These six books were used by Absalom M. Kennedy during 1913-1914 primarily for experiments on the kinetophone. There are entries pertaining to the making of kinetophone recording outfits, adjustments based on recommendations or testing, and experiments with various motors and other parts. There are also recording tests to determine the optimal stage positions for actors and props as well as other filming conditions. Some of Kennedy's notes describe meetings of the "kinetophone experimenters" and the tasks assigned to them. A few relate to the recording experiments in Notebooks by Edison and Other Experimenters—Recorder and Recording Experiments— A. M. Kennedy Books. Several entries contain notations that Kennedy was reporting to Miller Reese Hutchison. In some cases, he received instructions directly from Edison on projects to be undertaken, along with comments and suggestions. The notes indicate that Adolph F. Gall, L. E. Hammond, Daniel Higham, Charles W. Luhr, and George J. Werner were doing similar kinetophone-related projects. A few experiments by Kennedy on kinetophones and motion picture film, as well as references to kinetophone demonstrations, can be found Notebooks by Edison and Other Experimenters-Recorder and Recording Experiments.

The five books with indications of oversight by Edison have been selected.

N-Number	Labels and Inscriptions on Front Cover
Selected Books	
13-04-20	"Kinetophone Studio Outfits"
14-01-01.3	"Jobs Undertaken. Jan. 1, 1914. & Kinetoscopes Ideas"
14-01-12	"Daily Record of Work from Jan. 12, 1914. to Aug 5 - 1914"
14-01-21	"Kinetophone Studio Work"
14-08-05	"Daily Record of Kinetophone Experiments from Aug. 5-1914 to"

Book Not Selected

13-08-08 "Kineto Phonograph Experiments. Conversations - Improvements" Notebook Series -- Notebooks by Experimenters Other Than Edison Kinetophone and Kinetoscope Experiments -- A. M. Kennedy Books Notebook, N-13-04-20

This notebook was used by Absalom M. Kennedy in April 1913 as a record of experimental work on the kinetophone. Included is a description of the making of three complete kinetophone recording outfile—one for Europe, another for the laboratory, and a third for reserve. The entiries provide extensive details about each outfit, including camera, synchronizer, storage batteries, recording machine, amplifying machine, shaving machine, and blanks. They also describe adjustments made on the basis of recommendations or testing. Some final entries contain data regarding tests of business phonographs and motors. Also included are entries pertaining to meetings of the "kinetophone experimenters" and the tasks assigned to them. The notes indicate that Adolph F. Gall and George J. Werner were also doing kinetophone-related work and were consulted by Kennedy. There are tabs cut into the pages labeled "Camera," "Recorder," "Amplifier," "Shaver," and "Miscellaneous." The front cover and spine are each labeled "Kinetophone Studio Outfits." The pages are unnumbered. Approximately 50 pages have been used.

am Kennedy Laboratory MFG. STATIONERS, 96 JOHN ST AND 19 PLATT ST. NEW YORK. 54472

4/20/13. MAKING 3. COMPLETE KIENETOPHONE RECORDING OUTFITS. Three outfits complete to be first and third to consist 6- to have 2 focus VOIGHTLANDER. Funo puch as now week at Brond (Physics has data on This hom storage bottery, be Carlion pile sheostat for notion open control c- Counter obatt, chain drine and halance which. Det of storage batteries for operating camera etc One recording machine complete Spring drive and having a-line dozen pierrans complete. h-Theo dezen pierrans Etylus. (038 diameter, cupped with 135 lap) 2 outra feed gareers (1) feel ruto Recording mashine Pedestal Dynchronize cord tightener and pedestal,

& motor to sun same storage battery 6 - Carlion Sile rheastat for same C- 8 spart needle arms 6 recording papphires, 024 diameter cupped with. e- 3 reproducer ball papphines 037" dianieter. way Shaving machine having: a- 4 MP motor drive for/ came storage battery. 10 shaving knives 6 spare fleid nuto witha front centers size to case for recording

Blanks as follows: a 50 blanks for resording b- 200 operations for transporting blanks, Toh humatically sealed. Rinetophone compete mie b- all pain parts as at present included in sets.

e - telephone outfit. added by Committee) microsoffe with light an

consist of: 1 - Canera b- same as studio 8 spare retorts, Loo St Compete Complete not necessary. Recording machine wi a - thru Litra (ucordino. b. It dos pecording stylus as amplifying Machine with a - as studio equipment only of sapphines

front centero 2 Rear centers Dame as studio equips 8 - Mul get blanks as n The duplicate equipment Sand studio Shoul Same as the Europe outfut.

11/21/13 Meeting of Rienetop Que riend of meetin a multi-phase (synchronolis) shonograph and motion bicture camera as early a practically and only cot on to rigid tests That to be quitatuled for the air before the conference of autolifying and sharing machines. (But woluntuled to do this) Combined believe grow and plets pulling drive for amplify (Sall instructed to do This) On account of Mousion o spring centers instructed of solid. (Such woluntered to allend

Electrically heated how with thermostate control to heat wix againders in caus to temperatur (R. to design) That opings in small end of mandred of all (unording) machines, dickelled, not huff (K. to design) Mandrels capable of sliding on shafts to get dignmen by splint tape beings muto. aublifus only. (Yace Koungn) Teed nuts a springs to be twin That on amplifier to have please bush one woluntuse on latter) Obed adjusting screw to be Changed. (Bost recentered to do)

Top plate of recording machine to be factibled to top of how hughl (X to look after) coding machines to be under Territh lead Aly wheil od of paising recording arm by liver in place of sliding pin (K To look after Field nut spring seres holes clothed for adulatment. (K to look after) Pedestal for recording meeting to be designed Transfered Franchist Granofined Tr all machines to be prouded with sustion tutus for remore Chips (K to look after)

Those concusation furth Mr. Seeming developed that the to be portable. This must be taken into consideration on design.

was found that variation The feel nut com shaft to is who changed ged so that the fristion pull pled was increded and better tone was obtained drue bet be fut o other y loose side.

Markon machine developed that: mat:

Jawmen worm drue glad

vice & and luckled under otram.

Analte amount of dut in

harrings makes quite difference

of pegalation, furning and startes

I machine

of static etectricity he has had to Bradify the Pathe Cameras he has lised and Change hand ruleby rollers on retails for metal and remove when the anismpes also a slide our the retart outlet to prevent light from cretting in when door is Speniel. This slide. is operated by external lever. Veluet reviewed from film guide and metal rulers substituted. Rubben personal from back of aperture cover and duminim of This omethed Thoroughly. I'de peperts also that that The Pathe Camera posesses the following additional disaduantages focus as dow is on side furthest away from apriture

necessary due to double retorts and space retorts being kept in Camera case De that 2" Vaightlander Cours Present Leus to Doughtlander Steller to fit Pathe Motion Picture Camera, 2" focus. Reported that the mounts of Busent Pathe Cameras have been Changed and the about Varghelander lens was for old mount. Camera should be priviled with Deeder Or demeters which will read each fast of felin used. This may be blaced on the crank or ariunt sh Camera drive at Bronx Oludio is as follows: close to camera is fastened a pair

sham reports, records low used in 6" integrals. return out is a sprocket and This is appreed one pertion a unucusal joint consisting Ma shouldered disa with two king. These pines ingage in two of four slats of a losse washer In the other tens slots of which are two pins of a similar shouldered disc which is fastined to an independant shalt which with appropriate have so carrys weighing apparently pulley with v grow for round best which is bester to an Emuson Type 412 Ed Oberd 1800 - A.P. 1/16 - 1100, 9 amp wheel shalf carries a ly a chain The ration of get of these two sprockets

I Stegham says that a series or hetter. The object dissul line to to teep the motor leaded brake of the table by castings through which are carried 1/2" reds

du placed with mr. mudd

Present machine to be use modified as bollows: O Chain drive for feed screw to be changed to gear drue. Fixed centers on mandred to he repeaced by opring centers Bleimmum manarel to be Changed to brass mandrel and opings put on small Single feed muto to be changed to tiving muits , opings muit slotted screw holes so do to be adjustable. Steed adjusting knot to have plated head and not project ahour hed plate. Should have brevent turning to freely top of case and top of clase Duction tulu similar to one on chaving mashine to be frauded and ottashed.

8 Penn lift arm in pla as at puse paising peanding.

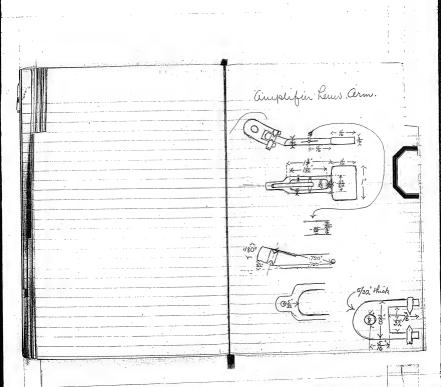
recording arm of the rearrher be mounted so as to slide on the present guide and that this sliding let regulated by a screw. That a microscope or other, finder he bouted on this arm. The purpose of this will be to locate the threed at cut i baint from which the recordinas baised assurate - ly if necessary to have a breck The also suggests a hook which to hang the en loop of and harding up the

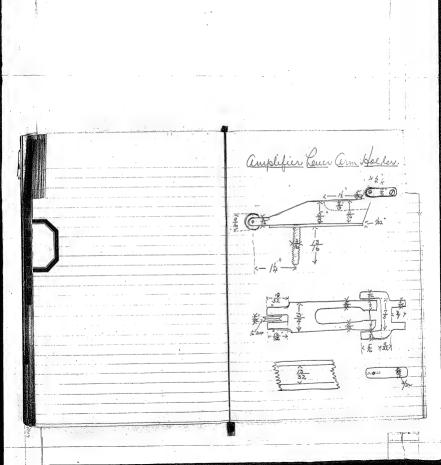
a mail blower such as used in business phonograph phasers, enclosed in a look to perent noise may perhaps be used to take dust away from pearter

Chain arive to feed nort to he changed to glas drive. Combined believe gear and but drive with belt pulleys of plightly different drawn oblit hearings stake mut so as to be adjustable on what with respect to each I muts and springs to tevin. Knob on feed or oprings to relieve readily Freed mut ofping to have plated somewholds for adjustment Suction tules for removing (6) chips to be plouided. cooling of nickel

designed to leavy this much than pegulal spring forms on mater shaft with Jams for this work show by Jumph with extension

Present machine to be used. (3) Brass mandrel, with hight plating of nickel, not level to be lessed. Lace reports 1/20 AP. for shaving Dhaving machine puns in was department at about 700 R. P. M





Design bedestal for recording machine arise and pyrochronizes the fruction blower to carry was chips from the three machines. Design for pedestal by Gall.

Esoner to make amplifying a mo The sistion blance should have a delate connected motor pufficient sufficient ory to gue pufficient a meroscope adapted to wamme master pearls placed be furnished with deep equipment. Daud 1500 1250 1000 Vacto amps. 30 800 500 300 800 600 500 1.00 300 1.03 250 1.05 200 28.37 28.3 38.5 1.05 150

en some or the some of the sound	<u> </u>	<u> </u>	and produce the section is a section of	<u> </u>	
		,			
	•		9.+1	Business Ph motor-Old	on renash
			26	motor - Old	Olyle.
and the second s					
			Oper	amps.	0 octs. 25.25. 25.
A CONTRACTOR OF THE PARTY OF TH		-	1200		25
			1000	.7	25.
			1000 800	.75	25
			7.00		25
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THE RESIDENCE OF THE RESIDENCE OF THE PERSON		MARKET PROPERTY AND ADDRESS OF THE PARTY OF	400	.87	25,
AND DESCRIPTION OF THE PERSON			300	9,1	25
			200	94	25.
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and the state of t	i				
				and the second	

Ta E Inc. East Pept, make two otyles of nations serves wound to AHS - Plunt or serves wound to AHS decrees beauty AC to AHS decrees wound to 30 years Dich.

First of 906 Due House Righting Contracter motor with Princeso Phonograph Blown. ho .15 25. 67.5

Dize of master second cans

Height-69m H.P. 3/4024 .01 1/6/13 Speed 43 500 30% 43 1000 015 .016 1500 43 3000 3500 43 43% ,015 43 . 43 # 2 Test 43 1.2 250 .004 ,009 43 500 .013 1000 ,016 1500 .018 2000 ,015 2500 .013 3000 .005

Neight-ban 3.25 ex 2.75 · 2.25 · 200 200 200 200 42 42 42 47 42 47 .82 /500 .68 2000 .55 2500 1.75. .75" 5" Tast

Test of Business Phonograph, D.C. Old Style

_		,			
Speed 250 500 1000 1500		1:4 1:3 1:1	Ngt-6'arın 3.25m 2:75 2:25 1:75 "	,0/3 ,0/5	13% 24% 31%
2500 3500 3500	365	.85 .70 .60	1.25 · .75 · .50 · .25 ·	.015 .011 .009 .005	36% 33% 30%
3000 3000 1800 2000 3500 3500	43 43 43 43	1.8	2, 4, 25 3, 78 3, 00 2, 25 1, 75 1, 25	.005 .011 .018 .02 .021 .031	5% /2% 22% 24% 33% 31%
					E-63

Dheeds of 12 nort motors ordered from Electrical Dept. L. Bronk Studio. Busines Phonograph D.G. moter, oil step, ordered for amplifier: 10 wats 500 RPM New Style enclosed shawing machine motor, as purposed for teletaphones 10 warts - 1100 RRM) - /300 - 1460

This motor is swound with #20 years on armature and #18 Staines sullisiont speed and power on 6 vocto for running the amplifur with motor secund with 22-24 ture on amature and 20-22 & fuels were do the work on

Notebook Series -- Notebooks by Experimenters Other Than Edison Kinetophone and Kinetoscope Experiments -- A. M. Kennedy Books Notebook, N-14-01-01.3

This notebook was used by Absalom M. Kennedy during January-Ferrary 1914 as a record of experimental work on the kinetophone. There are a few additional entries from December 1914 and January 1915. Included are experiments on frictional reproduction, motor regulation, and synchronous motors. The entries describe comparison tests between various brands of equipment, as well as inspections of records and reels for foreign orders. Also included are tests on kinetoscope shutters and film cement. At the end of the book is a list of ideas for improving the kinetoscope. The notes indicate that Kennedy received instructions directly from Edison on the work to be performed, along with comments and suggestions. There are also indications that John W. Farrell, Adolph F. Gall, Daniel Higham, and Charles W. Luhr were involved in similar work. The front cover is labeled "Jobs Undertaken. Jan. 1, 1914. & Kinetoscopes Ideas." The book contains 200 numbered pages and an index; many pages are blank.

00002 Test Edison Commy Pransformer 49 against Fortheyme Consensors Xe 5 Welding Mashine, Film Helding & Plaoury of Kinciophone Films Suspection of Felmo Reardo new Kinetoscope Shirtus boil Type Phiostato

New Tilm Cement of State 65 Combined Neight Sold Murror of Higher 71

Kinetophone Experiments 0011 0010 Tructional Reproduction. Mr. Edison outlined shoe and roce, letter of their roughened as by saind blast ellith the edges just procked off- Shoc of similar surface made to fit Outrospates that the shee out roll min sieze and pelease here with the vialuating movements of sound waves. Mr. Kulis completed & races. Tutlice assigned to making shows. Showed stul nel spent of show town E. Ded not like it and ordered pool made of german silver. Tittlive made sample of german odner rue , ohne, lightly stakes. Theo reproduced fairly men in quality but did not have enough friction or volume. Made two others, one flat, one with regular of grove and thehed deepersuich made place of files arun on ander roll Fritish fair, quality good, volume good.

0016

Kintophone Experiment 0017 Motor Regulation

Mr. Edison ditable varying tone in Kintophonopaph unlied were assimed to the bluppen; luit mether of genering. Suggested use of eld tope mot of material was or brick generior. This was trul but unbest good neutro due to the frail neutros of fortening the armature to shape to hark was not known competition.

0055

Kinetophone Experiments:0023

Den chronous motors for Running Kineto phonograph and Kineto scope.

Norten mode up a motor generation to transform Dr.C. into two phoses. One and a synchronous motor to be from the some some to characte the kilutoscope all later the kilutoscope all later the kilutoscope all later the truttphorosopaph. But decel put hat later cauch run at his famer. One that remises fields win confuser agreeted, the motor generation was adjusted of metro generation was adjusted by denying gold strugth.

norton made up for me two attending variables expediences mother in which states were consisted in Retero leve "wound " consisted to three certification purps which were connected to extruct in this way the amature great are of different frequency and the opied at

0024 which there were pun will be the difference helman the frequency of the states and there are Tests have not been competted.

Kinetophone Studio Outfor029 0028 To date two cutfits have been supplied, one to armany, one to Europe to be afluences 19/4 Higham keeks on thickness of amplifice leather letter. 19/14 Mr. Welson wants bramise of enter dates of suffits. 10/14 After pering Killy, promised author on 18th of 8th 1/0/14 Bet make on job assembling 1/16/14 Make dinished assembling Amounting combination of taken

0035 0034 Sort Mayre Compensare Fort rame Compensare - 110 Vectors Vortage Open Circuit 56.5 Ot 53 amp the following times were recorded in minutes - 44-5-57-5-52 Edison 60

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			37	\$3.38 34	<u>53</u>	Clas
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0012 point. Received the following rule & records Jun Backelons // Her Recemption 6 Julius Caesar Deck The Highwayman Tra Diauslo pts 1,2 In a Déanish Garden Ord Guard after Many Years pour Deaf mute Butler's Burglar - pto 102 cos Tred Pitter assigned to John Cheskes & Reardo Short ** Time Reards Part 3 C rejected on account of repeats. In making new moved for this master was broken by siekle.

0018

Ordered print of part 3 of to inspect and culd it could be cruck for part 3 C. Cheaped This proons "our.

Compute felico medicio and returned + 1/1/13 Reserved Missing people of Pragmett, Inspector them y pitioned to the stock poom.

ptimed to the steek poom.

1/1/13 Recurd from Central the feelewing seels:

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1/8/13 Recues from Stock Room

o Rendo Suna Retur 6 Filmo Olio Ministra 6 Rendo Miscoal Blassomit 6 Rendo Muscoal Blassomit I Keards Greek Feature 3 . Frank 38th . Gradienelo

Pelm In a Opanish Gerden 1 Rent French Resture

Hend Companie Film Companie I Selm aftaptica I Blood Filma Mucical Plaskomith

Plends Vernan Feeting Plants Clip Ministrals Officerds Clip Ministrals Officerds Committees

38th Rearts ... 3Felmo Occigio app

3 Reards " " 37 Reards " "

Retter o Agamain acagned to import.

0050 Jen mandy ato minolies 4 Humour, Dimpoey & Demoin Daymutt 135 1/00/14 Russian Derenade 2 Vius Vianto with in The ach Jeymour, Denepsey & Ceymour The Dead mute Sas. I make an Lecence from stock Daysham, Dupory & Daymons Das Rote Herz In/il Received Dac Rite Very · Politician Dable Sening Mit · Resture a Alymon, amprey & Soymen man Aludententition Dos Rute Tolery 1/16/14 Daniel Studenlehen 10 10 Bittlein Benglar Des Rose Herry SuBinne Scolland Ductitu Leon Rusia Campandi Chines of normano Singery Society

State of state and says a 1-

0053 0052 New Kinelrosope Stullers Delo There State neouting sample blank blaks peaced from timely cope of pt. I dute samples 1-360 blacks, 1-490 blacks. Il one liver

2/11/14. Reeks Humouttoche Valserder Der Politicker B Gererabend in Der Senhatte /0 10/2 The German Realing after Calage Days

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0064

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Remercia complaints to Kuitoscipe Department on filey comet not helding and turning white.

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Made up cement to duplicate this consisting of Demanting of alcohol sparts Gentleria Briggle:

Noiles apparently about the same as Bull Day. Makes firm untreakable yout but her for turned or marked respect to film. New try and

0067 eliminate this by adding a lew drops of easter oil of a trute camphor and Also wood in place of diviatured alcohol. Mr. Exitions on pipot hat the water un Deputational alegabel will cause film to turn white and to Mr. Travel, suggested that aimel hair quice brush be used in place tampies brush in tin as present and the cord. Made, up sample which was accepted by Farrill him rejection by Mutatison because contrivals not long enough to

Juguster Ly Sigham. 15-1 Shitch Guen Getersteiner 15-7 Maket Junched by

0138 D Thimmate useless gears between main shaft and shutter Shaft Destind main and intermettered phase and enclose intermettered in ail case. - Nerner 3 Rains spring clip on top A Elimination Mertinaion Phadow lox on B. L. lins. & Extension removable shutter Shaft for packing. @ Tool to turn both recentive luckings on sprocket shaft amillaheansly 1 Junck bush switch

[ITEM(S) FOUND IN BOOK]

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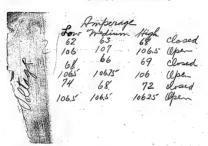
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45 1/6" 5.6.44.5.
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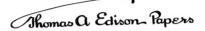
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